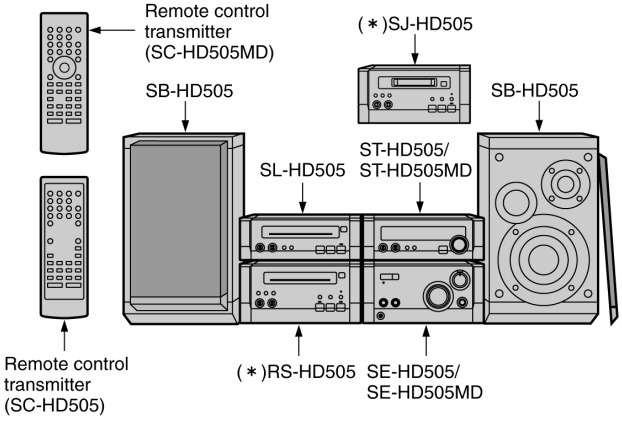
ORDER NO.AD9904111C5
A6

Service Manual

Compact Disc Player

COMPACT disc DIGITAL AUDIO

MASH multi-stagenoiseshaping



SL-HD505

Colour

(S).....Silver Type

Areas

PP.....U.S.A. and Canada.

E.....Europe.

System:SC-HD505

SC-HD505MD

Bicause of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Note: Refer to the service manual for Model No.SE-HD505/505MD (ORDER NO.AD9904110C5/ AD9904116A2) for information on “ACCESSORIES”, “INSTALLATION”, “CONNECTION” and “PACKAGING”.

Specification

Mechanism:RAE0152Z Mechanism Series

n**Audio**

DA converter:	1 bit 2 DAC MASH
Digital output terminal:	Opticalx1

n**Pickup**

Wavelength:	780nm

n**Format**

Sampling frequency:	44.1kHz

n**General**

Dimensions (WxHxD):	202x76x254mm
Weight:	1.4kg
Power Supply[For (E) area only]:	DC13V/10V
Power Consumption[For (E) area only]:	10W

Notes:

1.Design and specifications are subject to change without notice.

2.Dimensions and weight are approximate.

n**System**

SC-HD505:

Tuner:ST-HD505,**Compact Disc Player:SL-HD505**,Amplifier:SE-HD505,Cassette Deck:RS-HD505,Speakers:SB-HD505(Made in MAES.)

SC-HD505MD:

Tuner:ST-HD505MD, **Compact Disc Player:SL-HD505**, Amplifier:SE-HD505MD, Minidisc Deck:SJ-HD505 ,Speakers:SB-HD505 (Made in MAES.)

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics®

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1 Blue LED

- The LED mounted to each side of the front panel of this set is very sensitive to static electricity. When handling the LED base plate, be very careful about it.
- Do not replace a blue LED singly. If replaced singly, it may be subject to electrostatic breakdown or deterioration in quality. When replacing the LED base plate, be sure to replace L and R sides simultaneously to permit the brightness adjustment.

*For configuration at the time of supply of replacement parts,refer to “Printed Circuit Board Diagram.”

2 Before Repair

This equipment (SL-HD505),which is a component of this system,is supplied with power from the amplifier (SE-HD505/505MD) through the tuner (ST-HD505/505MD). When repairing this equipment or checking operation of the system, be sure to connect the amplifier and tuner with it.

This equipment, even in the state of it as a single equipment, permits power supply and operation check. When operating it as a single equipment without the amplifier and tuner, refer to the paragraph of "Measurements and Adjustments.

3 Precaution of Laser Diode

CAUTION:

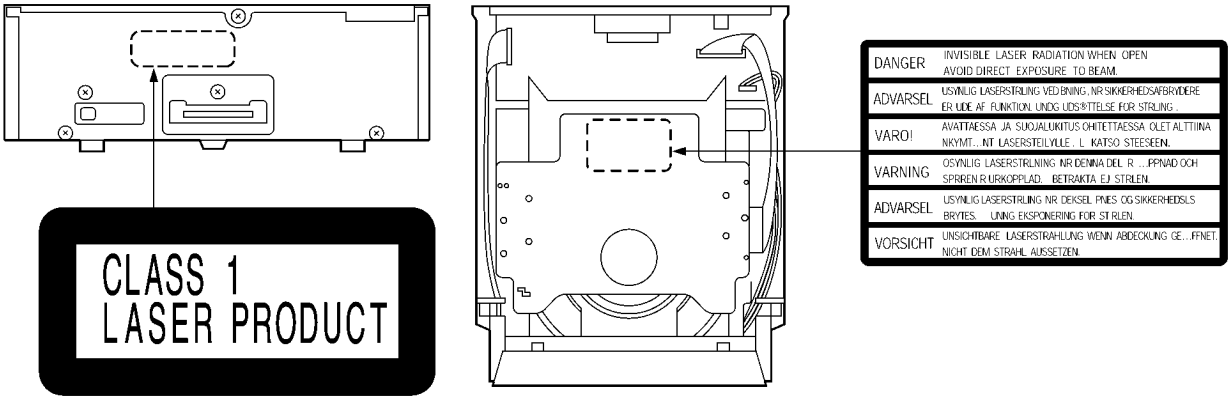
This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wave length:780 nm
Maximum output radiation power from pickup: 100 µ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Leserstrahlung von der Laserinheit adgestrahit.
Wellenlänge: 780 nm
Maximale Strahlungsleistung der Lasereinheit: 100 µ W/VDE
Die Strahlungan der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

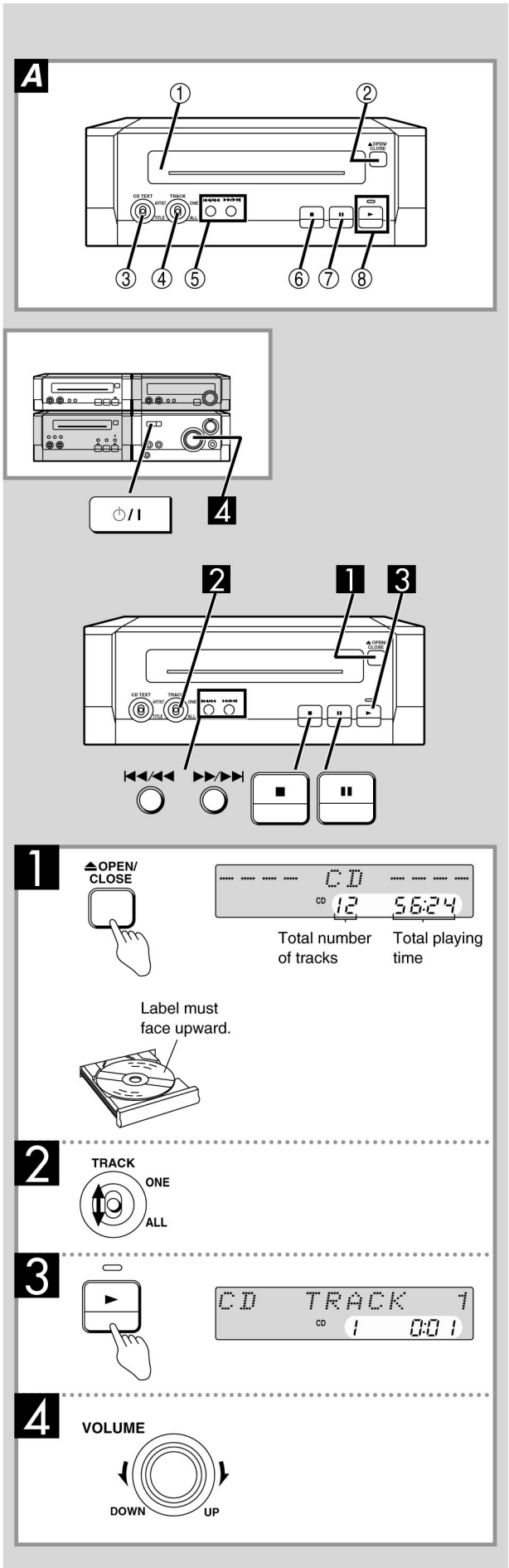
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4 Operating Instructions



Front panel controls

A CD player

① **Disc tray**
② **Disc tray open/close button (▲ OPEN/CLOSE)**
③ **CD TEXT switch (CD TEXT)**
④ **One track/all tracks switch (TRACK)**
⑤ **Skip/search buttons (⏮/◀◀, ▶▶/⏭)**
⑥ **Stop button (■)**
⑦ **Pause button (⏸)**
⑧ **Play button and indicator (▶)**
The color of the indicator depends on the operation taking place.
If stopped: orange
If playing: green

CDs

Normal Play

Preparation: turn the unit on.

1 Press [▲ OPEN/CLOSE] to open the tray.
Set a CD label up on the tray.
Press [▲ OPEN/CLOSE] to close the tray.

The number of tracks and playing time is displayed if “CD” is selected as the source.

2 Select “ALL” or “ONE” with [TRACK].
ALL: all tracks are played.
ONE: one track is played.

3 Press [▶] to start play.

4 Adjust the volume.

To stop the disc
Press [■].

To pause play
Press [⏸] during play. Press [⏸] or [▶] to resume play.

Skipping tracks
Press [⏮/◀◀] (backward), or [▶▶/⏭] (forward).

Searching through tracks
During play
Press and hold [⏮/◀◀] (backward), or [▶▶/⏭] (forward).

“NO DISC” is displayed
When the unit is in CD mode but a disc isn’t in the player.

Note

- You cannot skip to tracks already played in random play.
- Skipping is done in the selected order in program play.
- You can search only within tracks in random and program play.

5 Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

5.1. Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. The short land between the No. 5 (GND) and No. 4 (LD) pins on the flexible board is shorted with a solder build-up to prevent damage to the laser diode. (As shown in Fig. 1.)

   To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted. (As shown in Fig. 1.)

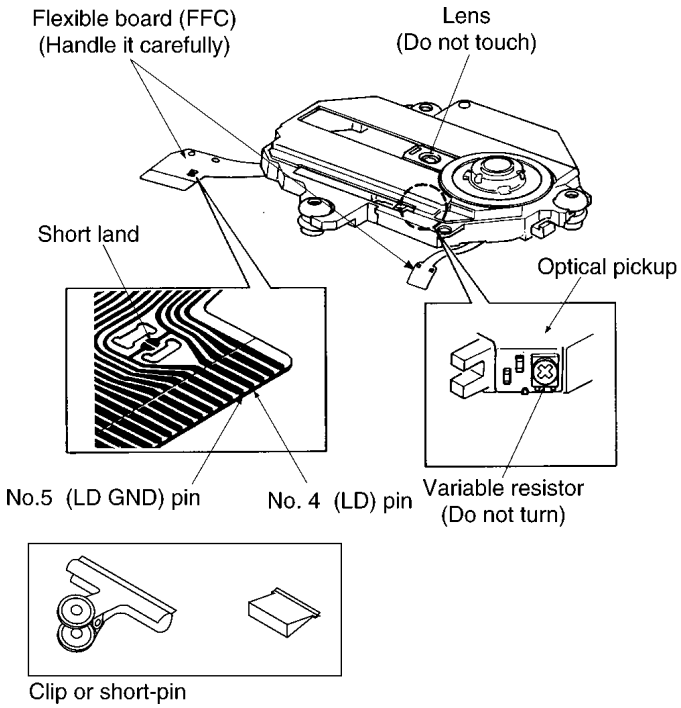


Fig. 1

5.2. Grounding for electrostatic breakdown prevention

1. Human body grounding

   Use the anti-static wrist strap to discharge the static electricity from your body. (As shown in Fig. 2.)
2. Work table grounding

   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

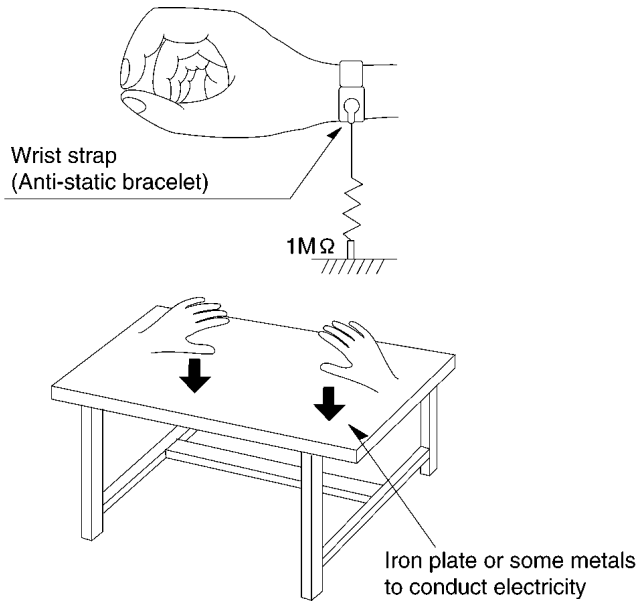


Fig. 2

6 Operation Checks and Component Replacement Procedures

NOTE **1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**

2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

3. Select item from the following index when checks or replacement are required.

• Contents

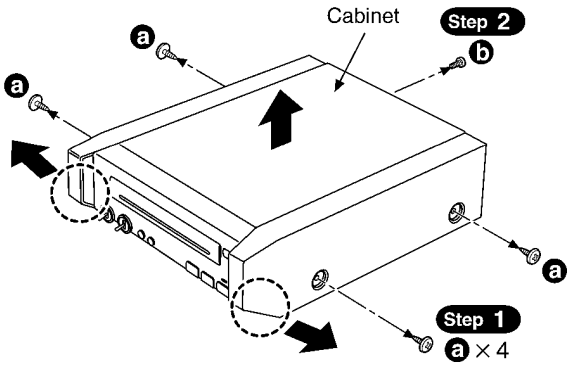
■ **Checking Procedures for each P.C.B.**
1. Checking for the CD servo P.C.B..
2. Checking for the main P.C.B..

■ **Main Component Replacement Procedures**
1. Replacement for the traverse deck ass'y.
2. Replacement for the belt, loading motor ass'y and loading switch.

■ **Lead wire and flat cable arrangement**

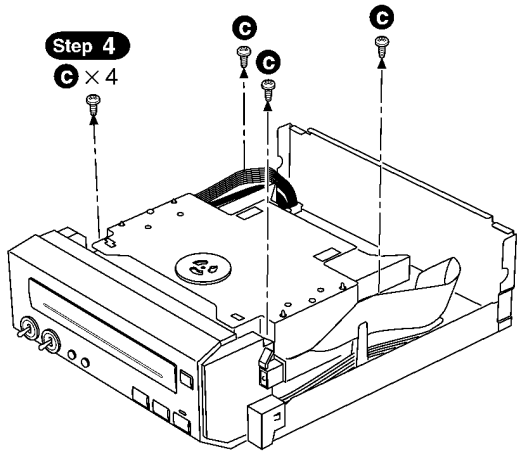
■ Checking Procedures for each P.C.B.

1. Checking for the CD servo P.C.B.



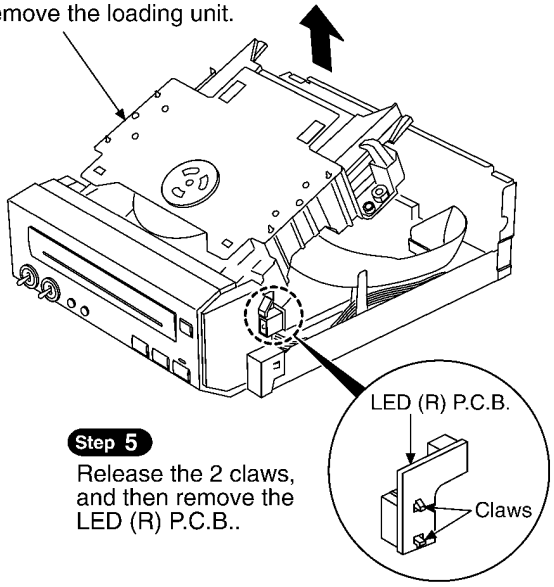
Step 3

Spreading the both front tails indicated with (◌) of cabinet a small amount, lift up and remove the cabinet in the direction of arrow.



Step 6

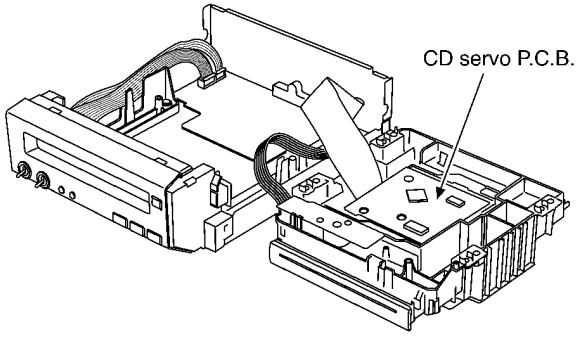
Remove the loading unit.



Step 5

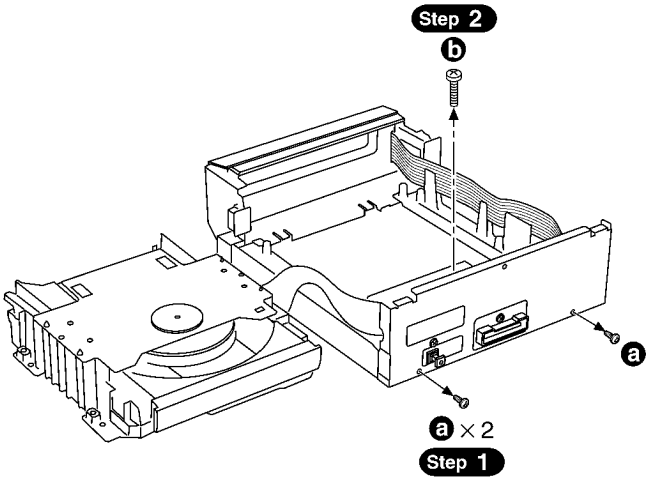
Release the 2 claws, and then remove the LED (R) P.C.B..

· Check the CD servo P.C.B. as shown below.



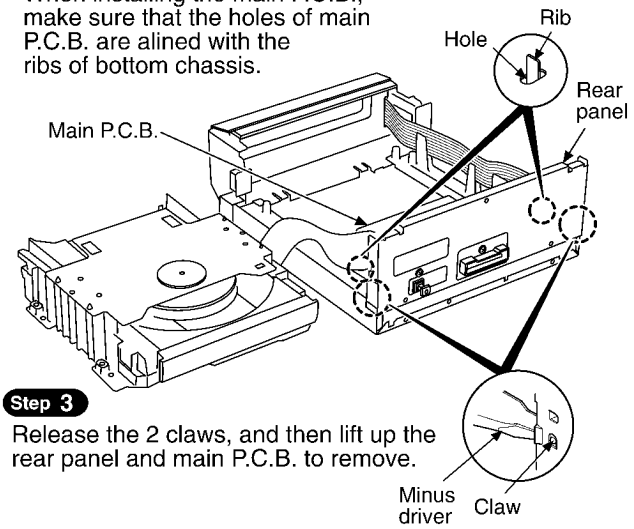
2. Checking for the main P.C.B.

・Follow the Step 1 ~ Step 6 of the item 1 in checking procedure for each P.C.B..

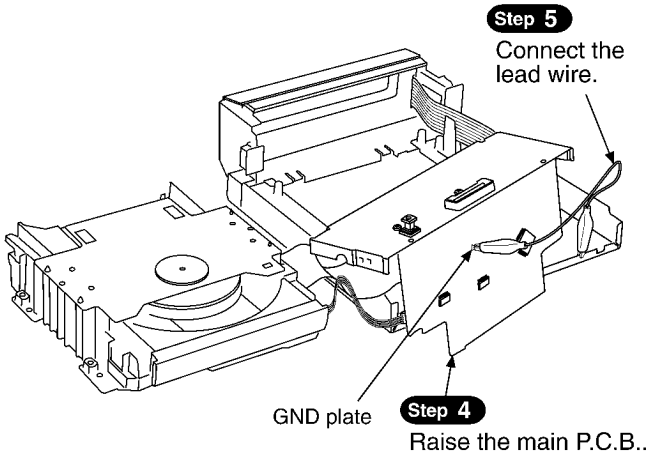


NOTE

When installing the main P.C.B., make sure that the holes of main P.C.B. are alined with the ribs of bottom chassis.



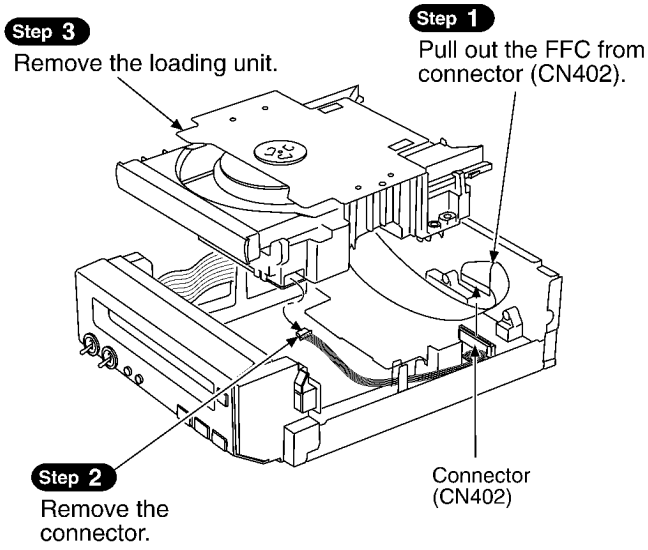
・Check the main P.C.B. as shown below.

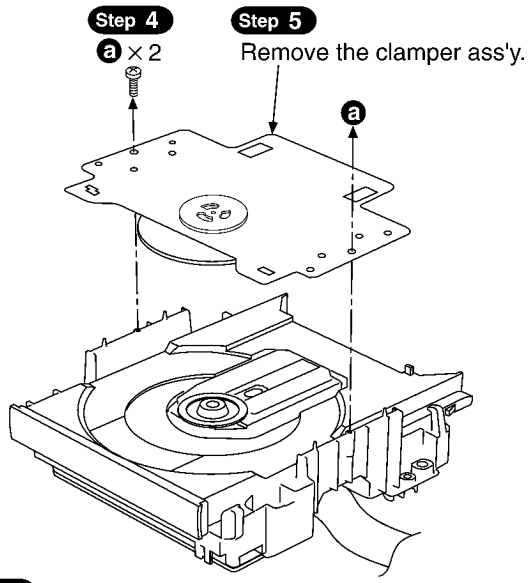


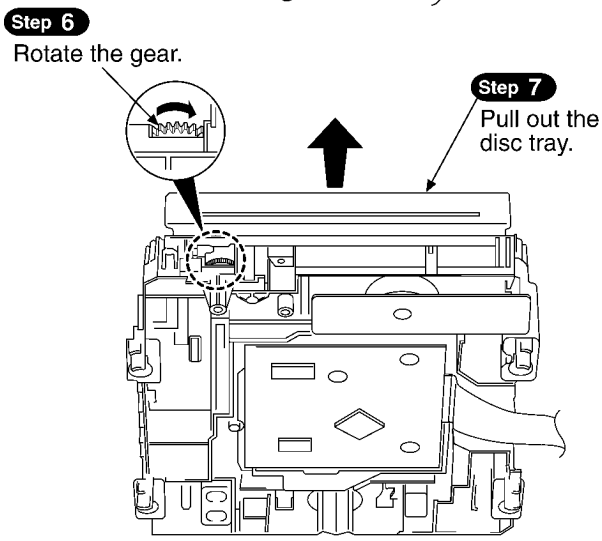
■ Main Component Replacement Procedures

1. Replacement for the traverse deck ass'y

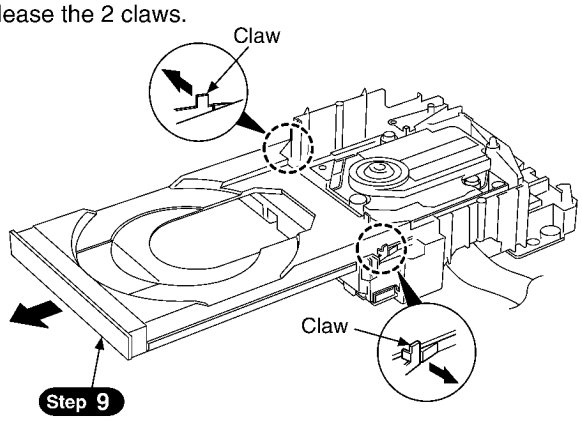
・Follow the Step 1 ~ Step 6 of the item 1 in checking procedure for each P.C.B..



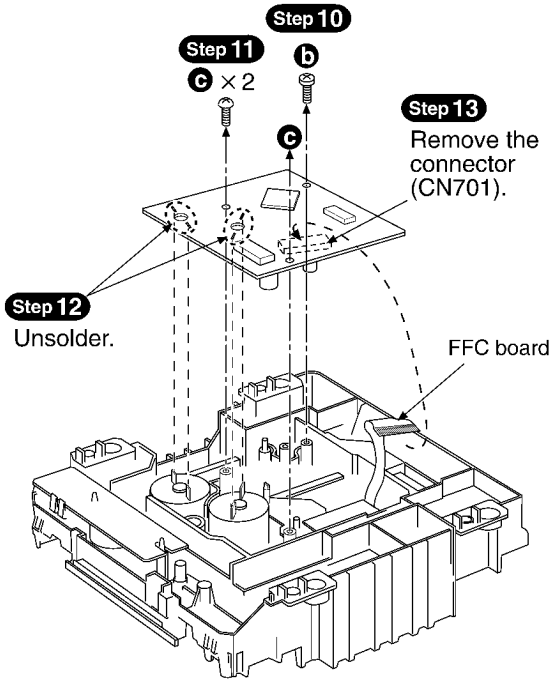




Step 8
Release the 2 claws.

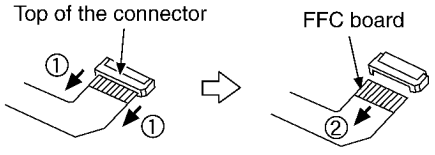


Step 9
Pull out the disc tray.

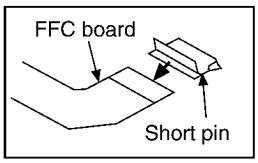


■ Removal of the FFC board

※ Push the top of the connector in the direction of arrow ①, and then pull out the FFC board in the direction of arrow ②.

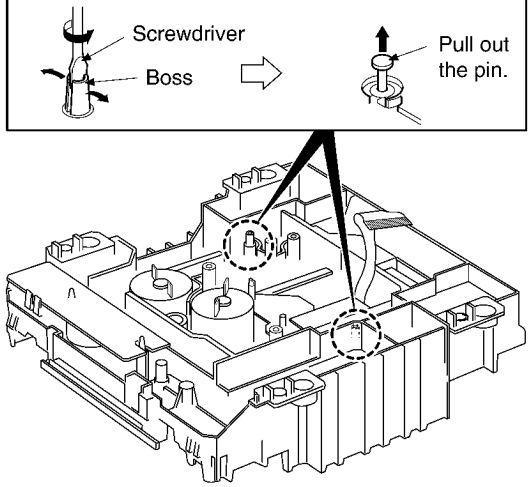


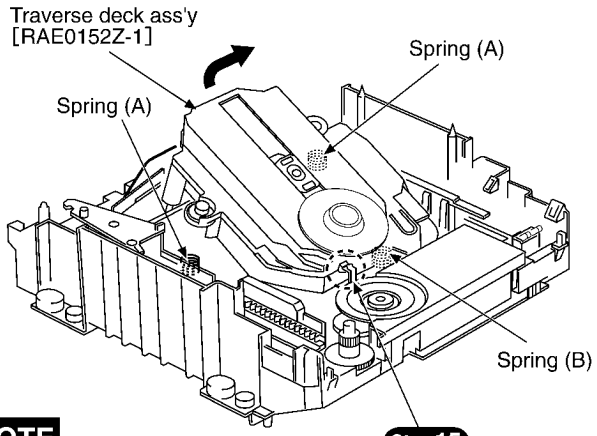
NOTE
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck".)



Step 14

1. Widen the boss using a regular screwdriver.
2. Pull out the pin in the direction of the arrow.



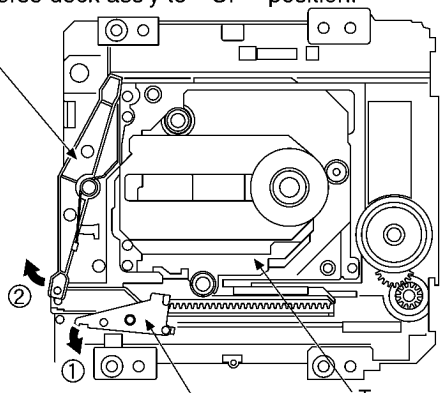


NOTE
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck ass'y.

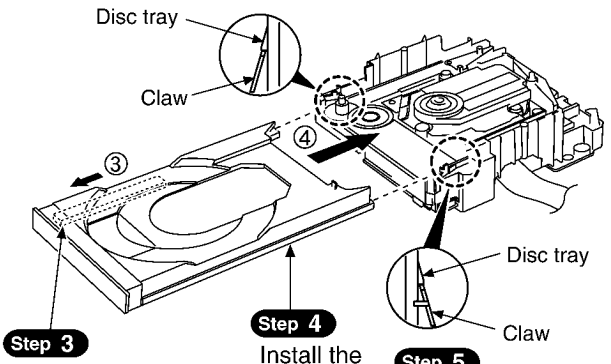
Step 15
Remove the claw.

Installation of the disc tray after replacement

Step 2
Operate the conversion lever, and then locate the traverse deck ass'y to "UP" position.



Step 1
Release the lock lever.

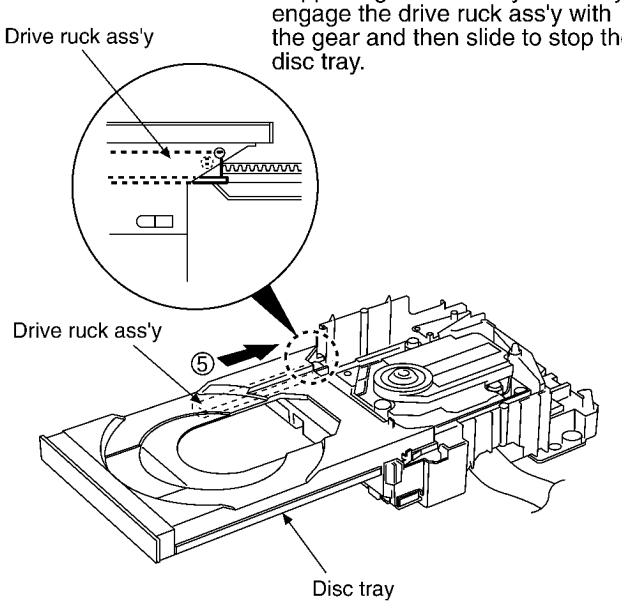


Step 3 Move the drive ruck ass'y in the direction of arrow ③.

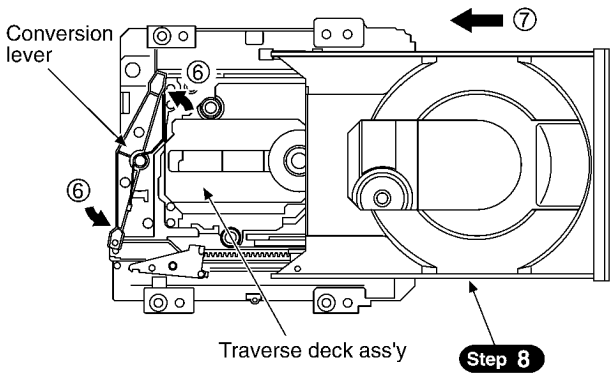
Step 4 Install the disc tray.

Step 5 Latch the claw to the disc tray.

Step 6 Supporting the disc tray manually, engage the drive ruck ass'y with the gear and then slide to stop the disc tray.

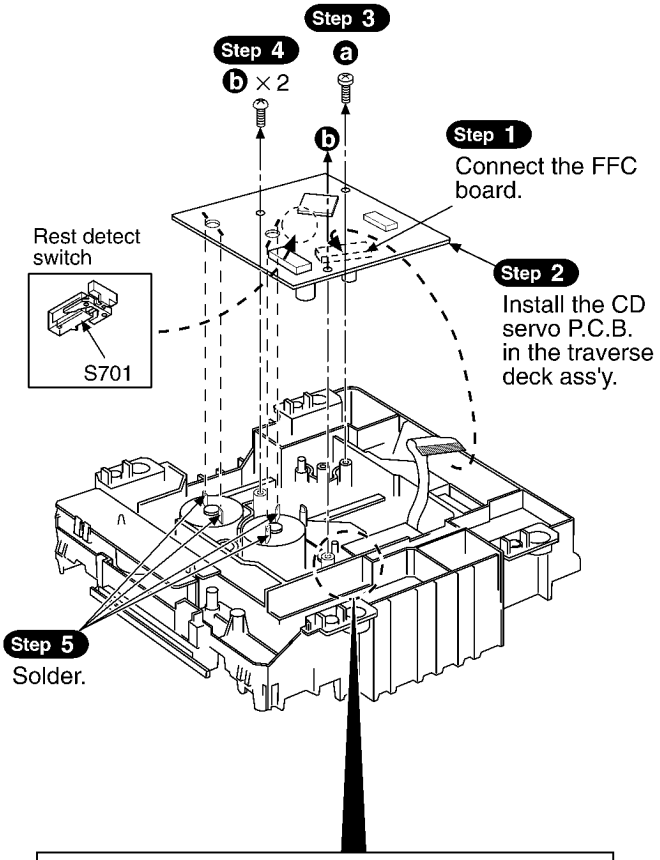


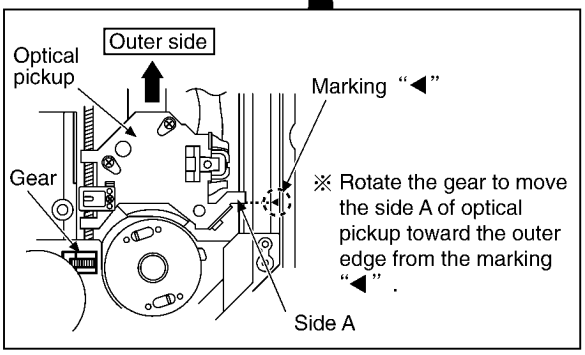
Step 7 Operate the conversion lever, and then locate the traverse deck to "DOWN" position.



Step 8 Press the disc tray.

Installation of the CD servo P.C.B. after replacement



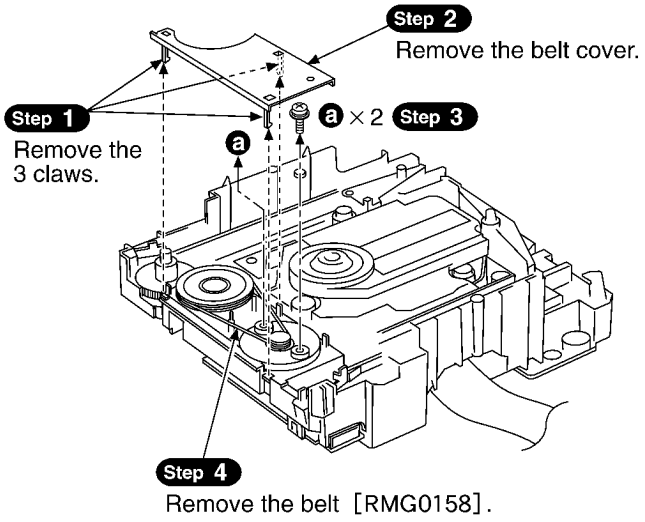

Outer side
Optical pickup
Marking "◀"
Gear
※ Rotate the gear to move the side A of optical pickup toward the outer edge from the marking "◀".
Side A

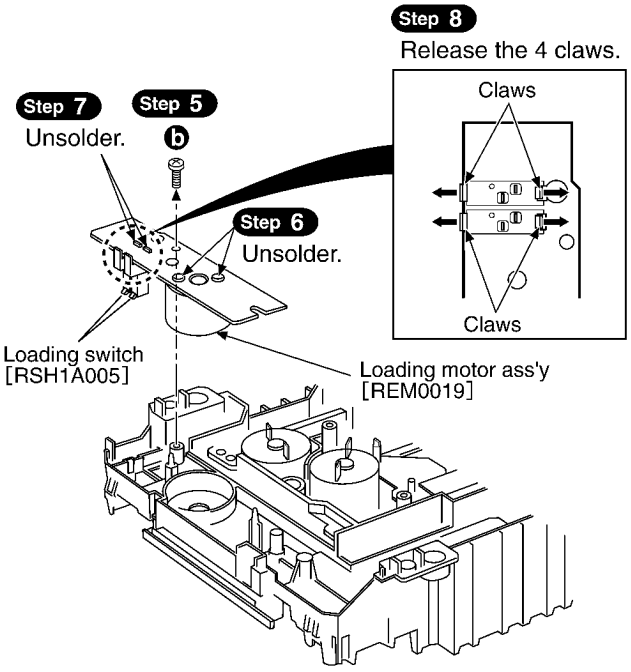
NOTE

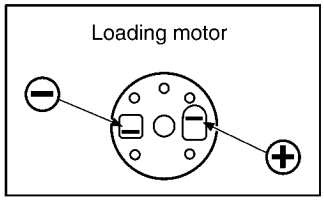
Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀". [Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

2. Replacement for the belt, loading motor ass'y and loading switch.

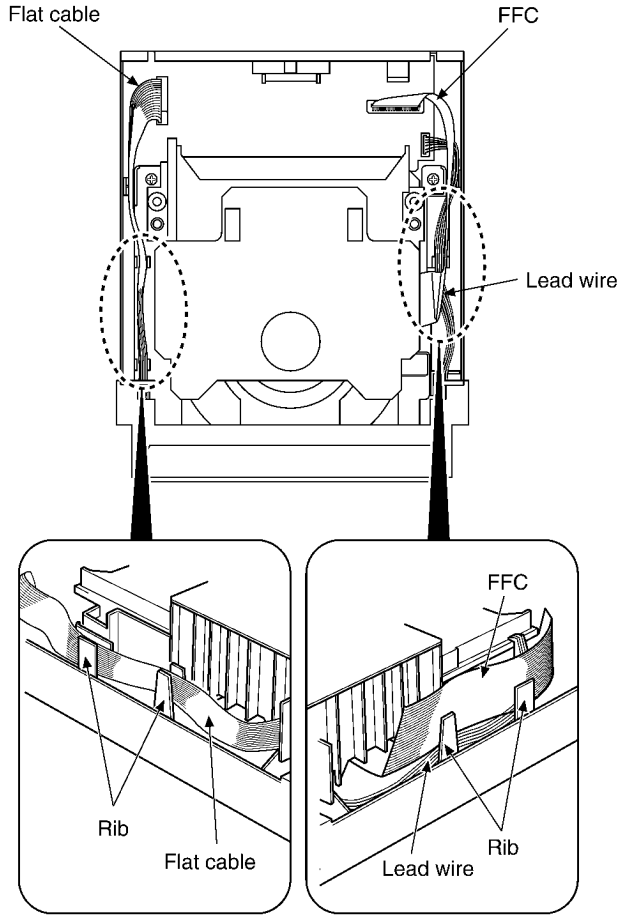
- Follow the Step 1 ~ Step 6 of the item 1 in checking procedure for each P.C.B..
- Follow the Step 1 ~ Step 9 of the item 1 in main component replacement procedures.







■ Lead wire and flat cable arrangement



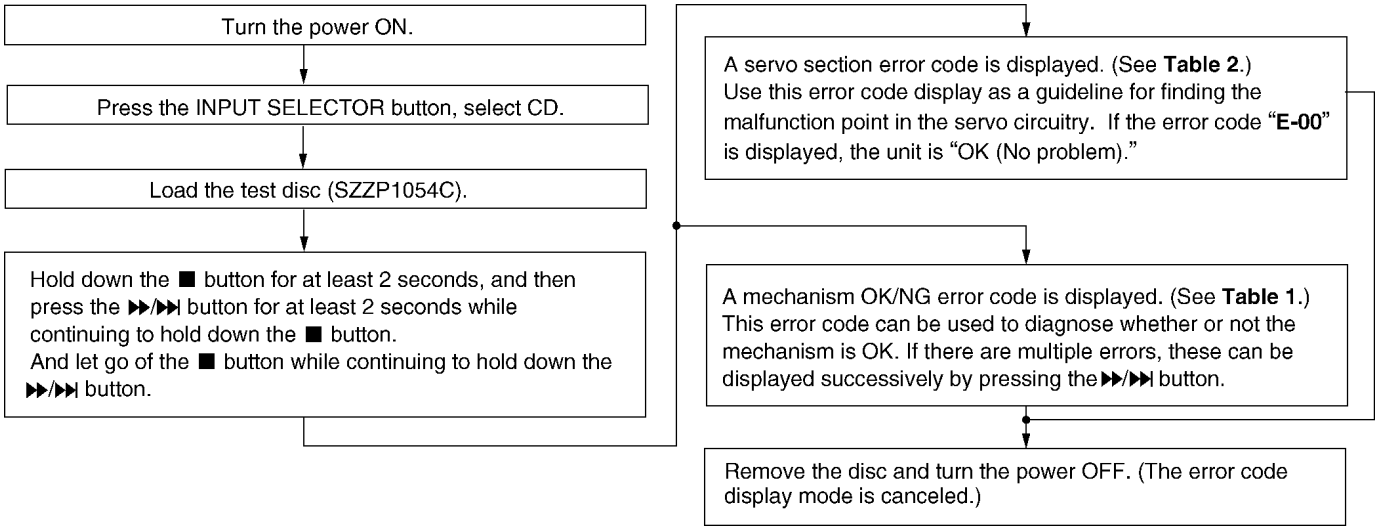
7 Error Code Display and Servo Adjustment Function

This unit has an error code display function, so that if the unit operates incorrectly, the fault is displayed using an error code on the FL display of the tuner (ST-HD505/505MD). It also has a servo adjustment function for displaying the status of servo system functions (focus, tracking, CLV) on the tuner´s FL display.The system control IC and FL display are part of the tuner so make sure the system has been connected properly before using these functions. (This unit can be operated independently, although the error code display and servo adjustment functions cannot be used.)Use these two functions for guidance during fault diagnosis and repair.

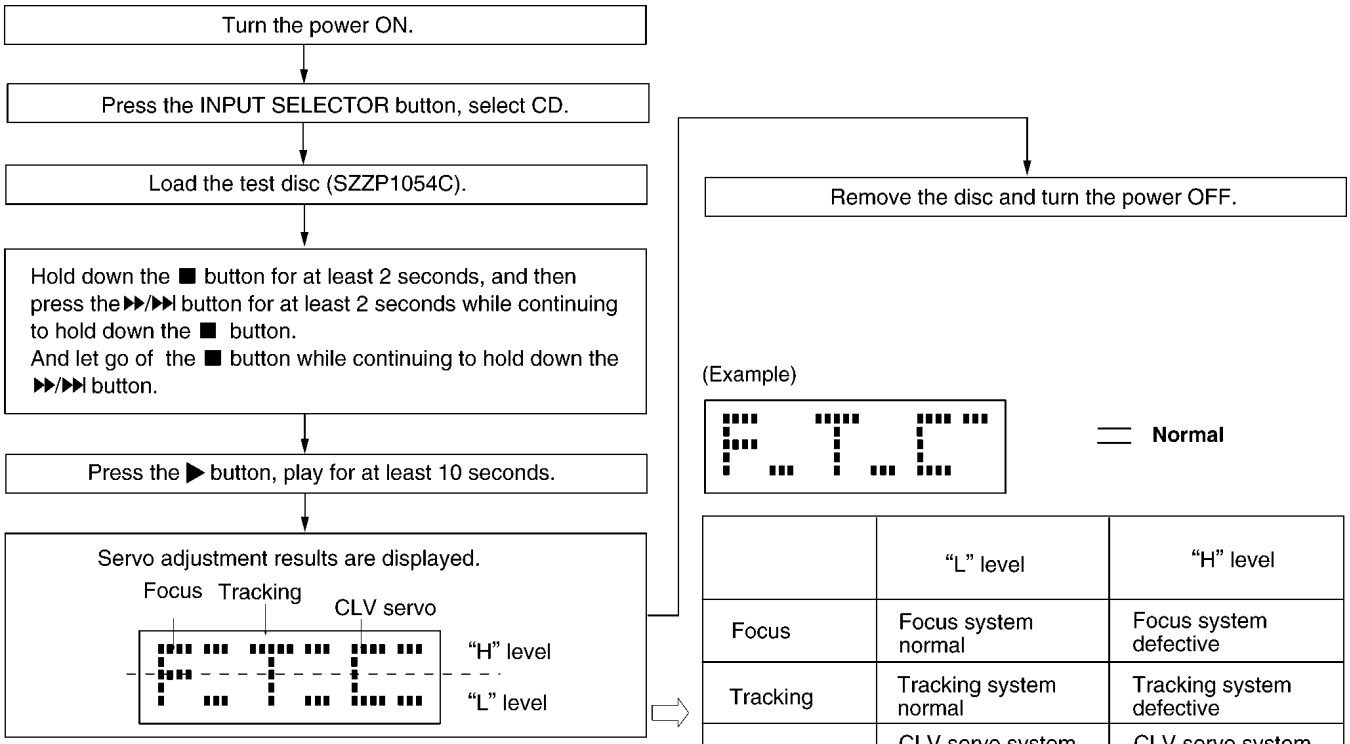
Note:

Check beforehand for scratching or soiling of the test disc (SZZP1054C), and soiling or other problems with the optical pickup lens.

7.1. Error code display procedure


Turn the power ON.
Press the INPUT SELECTOR button, select CD.
Load the test disc (SZZP1054C).
Hold down the ■ button for at least 2 seconds, and then press the ▶▶/▶▶| button for at least 2 seconds while continuing to hold down the ■ button.
And let go of the ■ button while continuing to hold down the ▶▶/▶▶| button.
A servo section error code is displayed. (See Table 2.)
Use this error code display as a guideline for finding the malfunction point in the servo circuitry. If the error code "E-00" is displayed, the unit is "OK (No problem)."
A mechanism OK/NG error code is displayed. (See Table 1.)
This error code can be used to diagnose whether or not the mechanism is OK. If there are multiple errors, these can be displayed successively by pressing the ▶▶/▶▶| button.
Remove the disc and turn the power OFF. (The error code display mode is canceled.)

7.2. Servo adjustment procedure

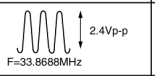
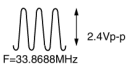
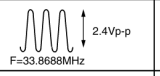
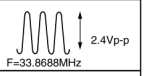
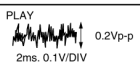
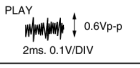
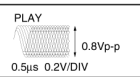
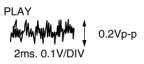

Turn the power ON.
Press the INPUT SELECTOR button, select CD.
Load the test disc (SZZP1054C).
Hold down the ■ button for at least 2 seconds, and then press the ▶▶/▶▶| button for at least 2 seconds while continuing to hold down the ■ button.
And let go of the ■ button while continuing to hold down the ▶▶/▶▶| button.
Press the ▶ button, play for at least 10 seconds.
Servo adjustment results are displayed.
Focus
Tracking
CLV servo
"H" level
"L" level
Remove the disc and turn the power OFF.
(Example)
Normal

	"L" level	"H" level
Focus	Focus system normal	Focus system defective
Tracking	Tracking system normal	Tracking system defective
CLV servo	CLV servo system defective	CLV servo system normal

7.3. Table 1

FL display	Symptom	Cause
H - 15	When CD tray opens, it closes by itself.	Disc tray "Open" detection sensor fault.
H - 16	When CD tray closes, it opens by itself.	Disc tray "Closed" detection sensor fault.
F - 15	Does not play, even when ▶ (PLAY) is pressed.	Pickup rest position detection switch fault.
F - 26	Does not move even when ▶(PLAY) is pressed.	System control or servo processor IC fault.

7.4. Table 2

FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E-01	Focus and tracking offset adjustments not completed in the specified time period.	1. Clocks X1, power supply V_{DD} and reset/RST, all on IC702. 2. MDATA, MCLK, and MLD signal to/from IC403.	IC702 8 pin	MDATA		0V
			IC702 7 pin	MCLK		3.4V
			IC702 9 pin	MLD		
			IC702 18 pin	/RST	3.4V	3.4V
			IC702 58 pin	X1 IN		
			IC702 59 pin	X2 OUT		
E-02 E-04 E-06 E-0A E-0C E-0E	Disc play unstable.	1. Scratches or contaminants on disc surface. 2. Focus and tracking servo circuits. (check waveforms, voltages, and part values.) 3. Spindle driver circuit. 4. Optical pickup.	IC702 32 pin	FE		1.7V
			IC702 33 pin	TE		1.7V
			IC702 28 pin	FOD	1.7V	1.7V
			IC702 27 pin	TRD	1.7V	1.7V
			IC702 38 pin	/RFDET	0V	3.4V
			TJ 701	RF		1.0 V
			IC702 17 pin	STAT	3.3V	0V
E-08 E-0A	Focus or Tracking gain adjustment not conpleted in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit. (check waveforms, voltages, and part values.) 3. Optical pickup.	IC702 32 pin	FE		1.7V
			IC702 33 pin	TE		1.7V
			IC702 36 pin	OFT	0V	0V

8 Measurements and Adjustments

Cautions:

- **It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.) With the unit turned "ON" , laser radiation is emitted from the pickup lens.**
- **Avoid exposure to the laser beam, especially when performing adjustments.**

This unit SL-HD505 is designed to operate on power supplied from the Amplifier SE-HD505/505MD through the Tuner ST-HD505/505MD.When connecting the unit to other system components, do not connect to the Amplifier SE-HD505/505MD directly. Be sure to connect this unit through the Tuner ST-HD505/505MD.When operating the unit SL-HD505 alone for testing and servicing, without having power supplied from the Amplifier SE-HD505/505MD, use the following method.

8.1. Power Supply to This Unit alone

Apply 10V DC power to the section between TP402 (far side from rear panel of R441) and earth plate (E401). (As shown in Fig. 3.)

8.2. To Check Signals

Connect the oscilloscope or the speaker with built-in amplifier to the section between JK401-pin16[LINE OUT (Rch)] and earth plate (E401) (GND) as well as the section between JK401-pin18 [LINE OUT (Lch)] and earth plate (E401) (GND) and check if the signals are outputting from this unit. (As shown in Fig. 3.)

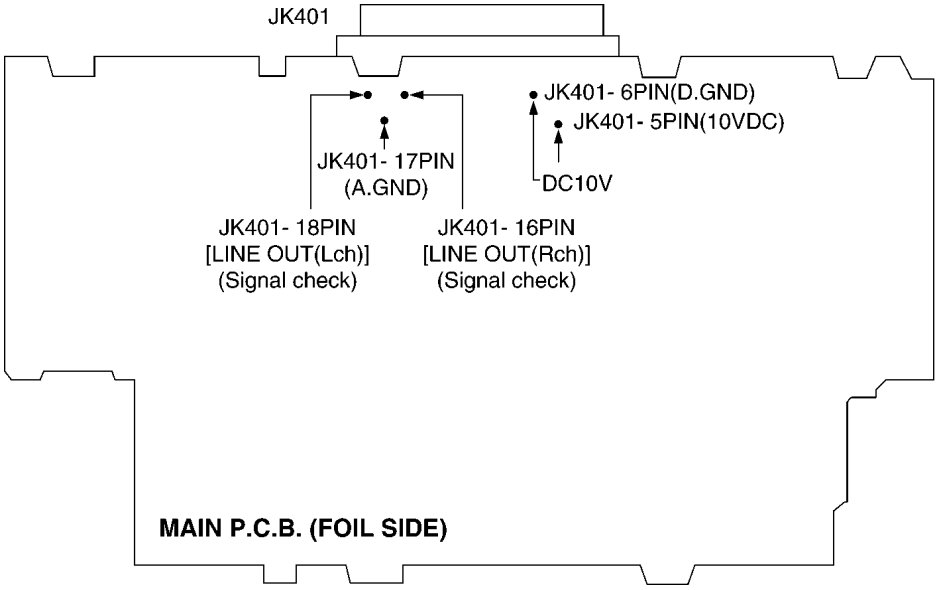
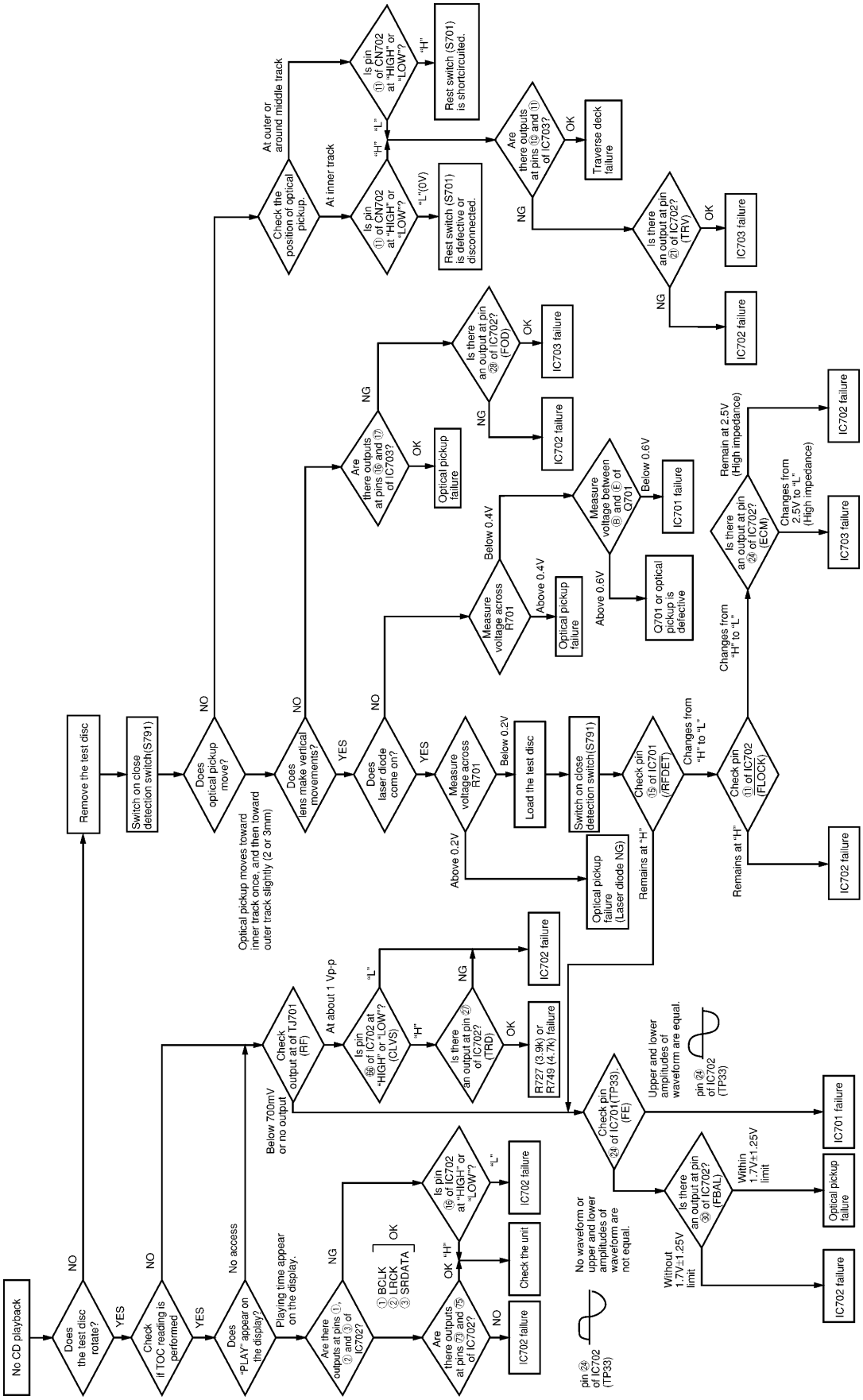
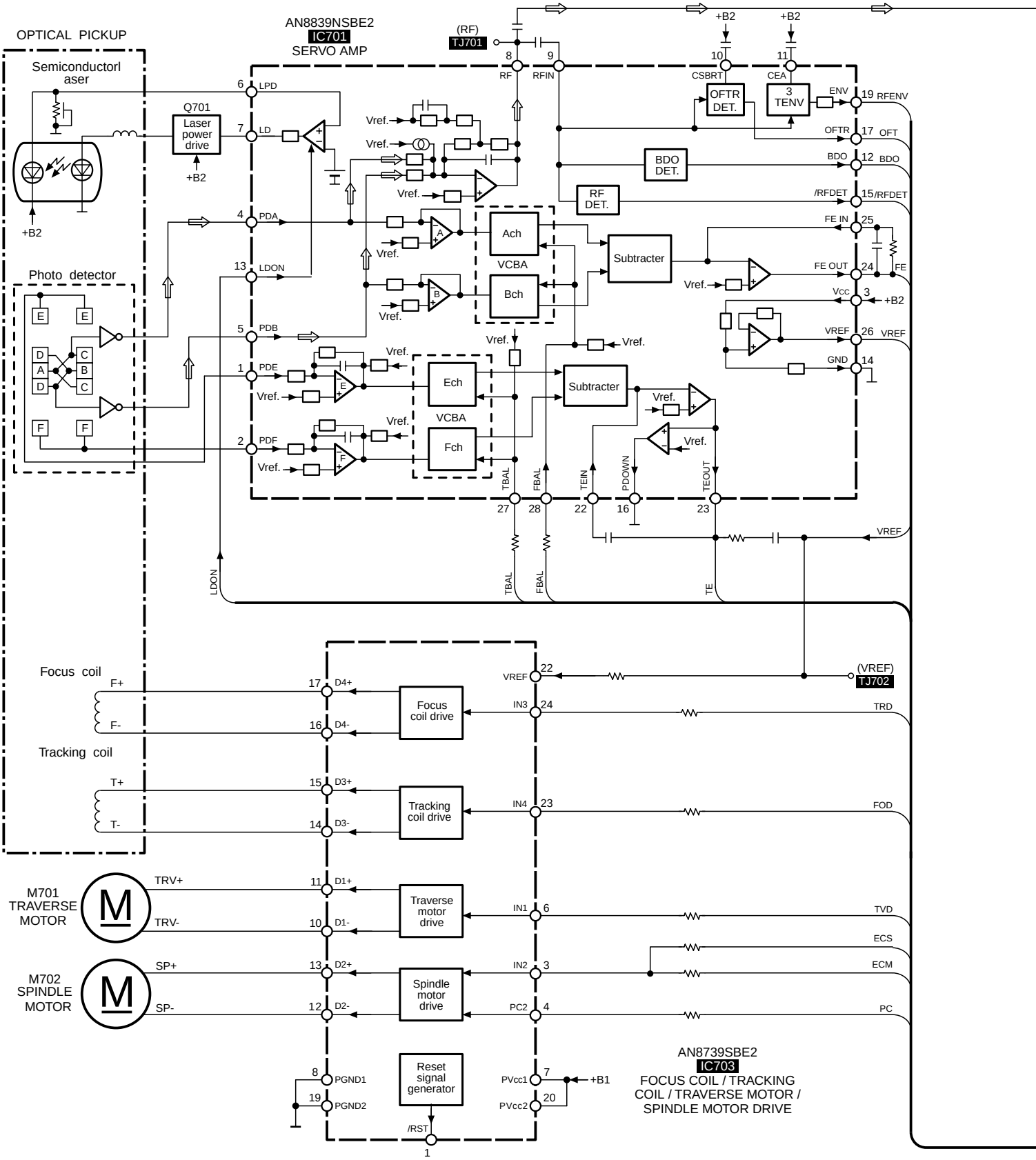


Fig. 3

9 Troubleshooting Guide


No CD playback
Does the test disc rotate?
NO
YES
Remove the test disc
Check If TOC reading is performed
NO
YES
Switch on close detection switch(S791)
Does "PLAY" appear on the display?
No access
Does optical pickup move?
NO
Optical pickup moves toward inner track once, and then toward outer track slightly (2 or 3mm)
Playing time appear on the display.
Does lens make vertical movements?
NO
YES
Are there outputs at pins ①, ② and ③ of IC702?
NG
① BCLK
② LRCK
③ SRDATA
OK
Does laser diode come on?
NO
YES
Are there outputs at pins 73 and 75 of IC702?
OK "H"
NO
Measure voltage across R701
Below 0.4V
Above 0.4V
Optical pickup failure
Measure voltage across R701
Above 0.2V
Below 0.2V
Load the test disc
Switch on close detection switch(S791)
Optical pickup failure (Laser diode NG)
Check pin ⑮ of IC701 (/RFDET)
Changes from "H" to "L"
Remains at "H"
Check pin ① of IC702 (FLOCK)
Remains at "H"
IC702 failure
Changes from "H" to "L"
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
Changes from 2.5V to "L" (High impedance)
IC702 failure
IC703 failure
Measure voltage between ⑤ and ⑥ of Q701
Below 0.6V
Above 0.6V
IC701 failure
Q701 or optical pickup is defective
Check the position of optical pickup.
At outer or around middle track
At inner track
Is pin ⑪ of CN702 at "HIGH" or "LOW"?
"H"
"L"
Rest switch (S701) is shortcircuited.
"L"(0V)
Rest switch (S701) is defective or disconnected.
Are there outputs at pins ⑯ and ⑰ of IC703?
OK
Traverse deck failure
NG
Is there an output at pin ㉑ of IC702? (TRV)
OK
IC703 failure
NG
IC702 failure
Is there an output at pin ㉘ of IC702? (FOD)
OK
IC703 failure
NG
IC702 failure
Are there outputs at pins ⑯ and ⑰ of IC703?
OK
Optical pickup failure
NG
Check output at of TJ701 (RF)
Below 700mV or no output
At about 1 Vp-p
Is pin ⑯ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
IC702 failure
"H"
Is there an output at pin ㉗ of IC702? (TRD)
NG
IC702 failure
OK
R727 (3.9k) or R749 (4.7k) failure
Check pin ㉔ of IC701(TP33) (FE)
Upper and lower amplitudes of waveform are equal.
pin ㉔ of IC702 (TP33)
No waveform or upper and lower amplitudes of waveform are not equal.
pin ㉔ of IC702 (TP33)
Is there an output at pin ㉙ of IC702? (FBAL)
Within 1.7V±1.25V limit
IC701 failure
Optical pickup failure
Without 1.7V±1.25V limit
IC702 failure
Is pin ⑯ of IC702 at "HIGH" or "LOW"?
"L"
IC702 failure
Check the unit

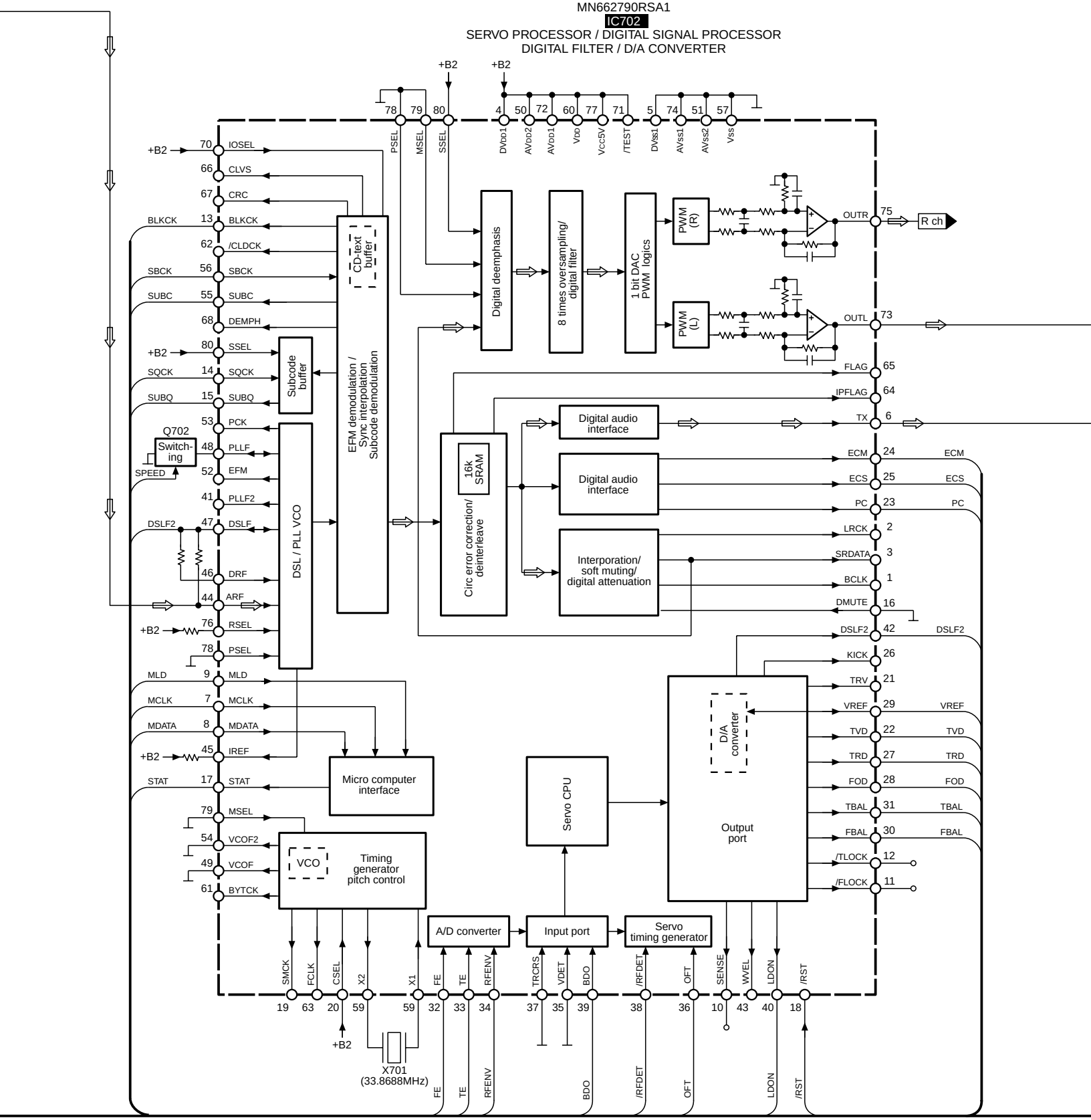
10 Block Diagram

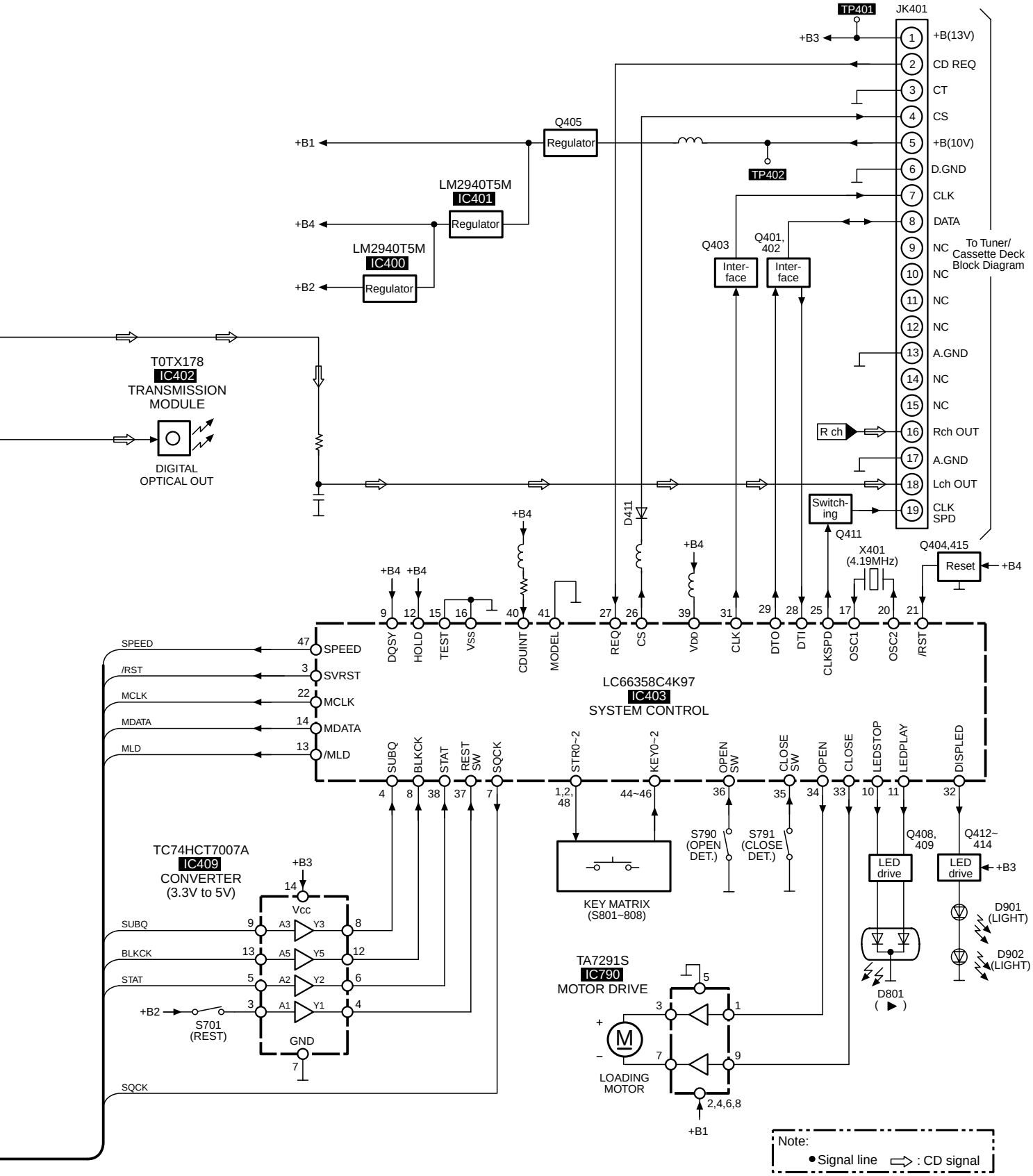


MN662790RSA1

IC702

SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER / D/A CONVERTER




TP401
JK401
+B3
+B(13V)
CD REQ
CT
CS
+B(10V)
D.GND
CLK
DATA
NC
NC
NC
NC
A.GND
NC
NC
R ch
Rch OUT
A.GND
Lch OUT
Switch-ing
CLK SPD
To Tuner/ Cassette Deck Block Diagram
Q405
Regulator
+B1
LM2940T5M
IC401
Regulator
+B4
LM2940T5M
IC400
Regulator
+B2
TP402
Q403
Q401, 402
Inter-face
Inter-face
T0TX178
IC402
TRANSMISSION MODULE
DIGITAL OPTICAL OUT
D411
Q411
X401 (4.19MHz)
Q404,415
Reset
LC66358C4K97
IC403
SYSTEM CONTROL
DQSY
HOLD
TEST
VSS
CDUINT
MODEL
REQ
CS
VDD
CLK
DTO
DTI
CLKSPD
OSC1
OSC2
/RST
SPEED
/RST
MCLK
MDATA
MLD
SUBQ
BLKCK
STAT
REST SW
SQCK
STR0~2
KEY0~2
OPEN SW
CLOSE SW
OPEN
CLOSE
LEDSTOP
LEDPLAY
DISPLED
KEY MATRIX (S801~808)
S790 (OPEN DET.)
S791 (CLOSE DET.)
Q408, 409
Q412~ 414
LED drive
LED drive
D901 (LIGHT)
D902 (LIGHT)
D801
TC74HCT7007A
IC409
CONVERTER (3.3V to 5V)
Vcc
GND
S701 (REST)
TA7291S
IC790
MOTOR DRIVE
LOADING MOTOR
2,4,6,8
Note:
Signal line
: CD signal

11 Schematic Diagram Notes

11.1. Scheamtic Diagram Notes

This schematic diagram may be modified at any time with the development of new technology.

Notes:

- S701 : Rest position detect switch in “OFF” position. (It turns “ON” when optical pickup comes to innermost periphery)
- S790 : CD tray open detection switch.
- S791 : CD tray close detection switch.
- S801 : Stop (■) switch.
- S802 : Play (▶) switch.
- S803 : Pause (❚❚) switch.
- S804 : CD tray open/close (▲OPEN/CLOSE) switch.
- S805 : F. skip/ search (▶▶ / ▶▶|) switch
- S806 : R. skip/ search (|◀◀ / ◀◀) switch.
- S807 : CD text select (CD TEXT) switch.
- S808 : AI edit (AI EDIT) switch.
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

No mark: CD STOP

( ): CD play [1kHz, L+R, 0dB]

Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture´s specified parts shown in the parts list.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

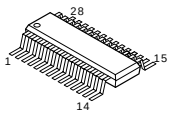
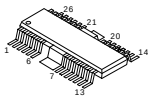
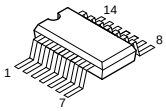
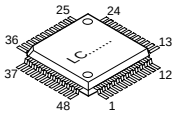
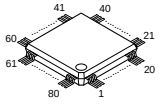
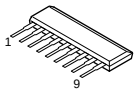
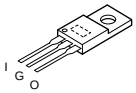
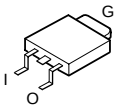
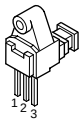
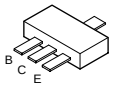
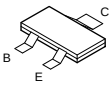
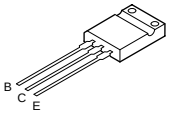
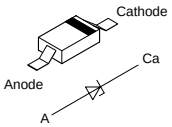
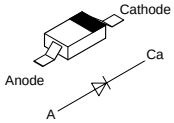
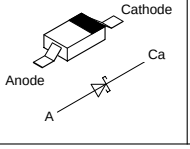
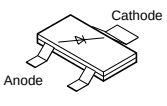
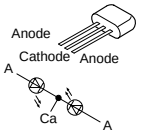
Do not touch the legs of IC or LSI with the fingers directly.

Voltage and signal lines

: Positive voltage line

: CD signal line

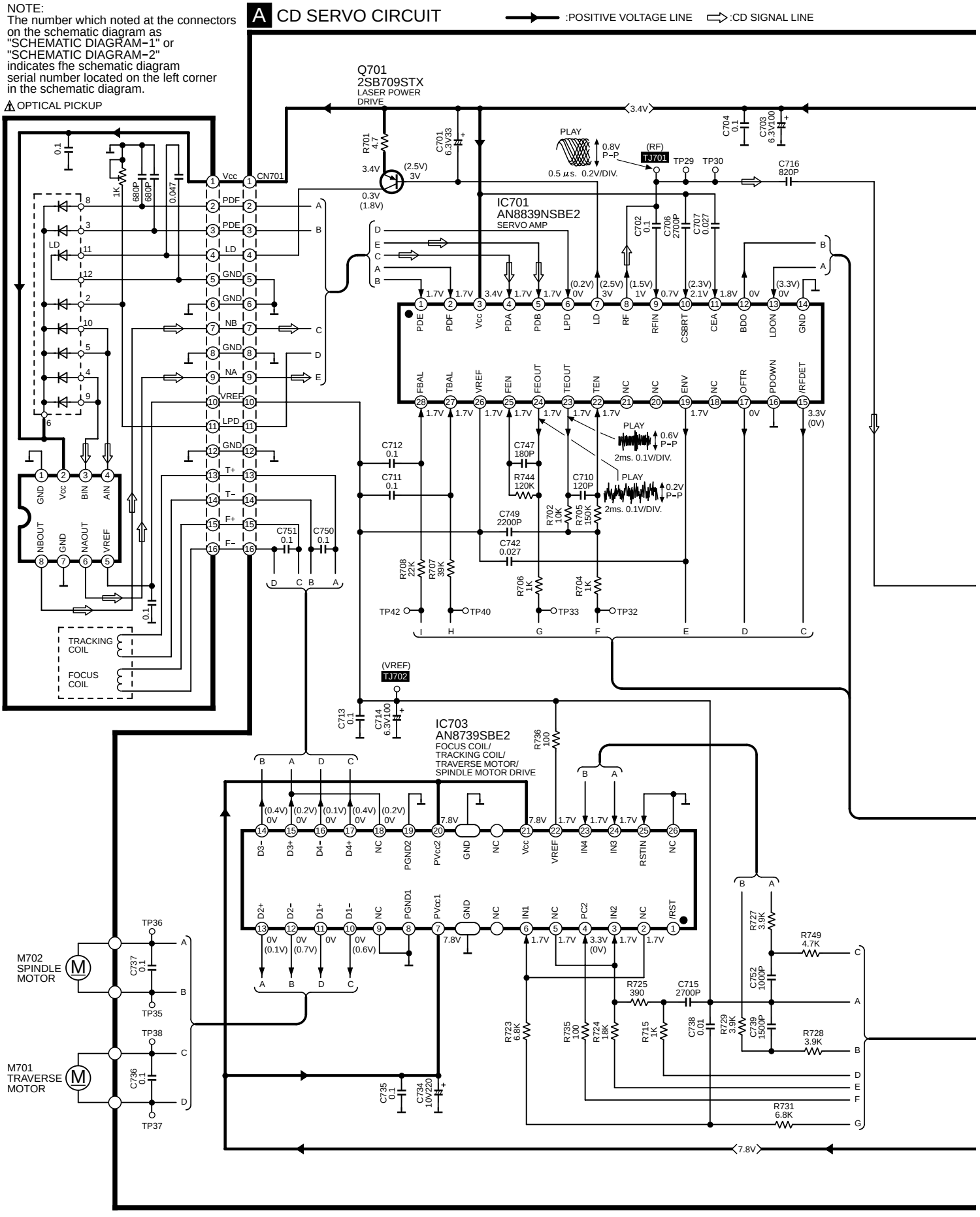
11.2. Type Illustration of IC’s, Transistors and Diodes

AN8839NSBE2 	AN8739SBE2 	TC74HCT7007A 	LC66358C4K97 	MN662790RSA1 	TA7291S 
LM2940T5M 	UPC29M33T 	T0TX178 	2SB956RTX 		2SB709STX 2SC4081STX DTA143XUT106 DTC114YUT106 DTC143EUT106 DTC143XUA106
2SD2137PQTA 	MA8082MTX MA8039LTX 	MA111TX 	MA728TX 	MA28TATX 	SML79420C 

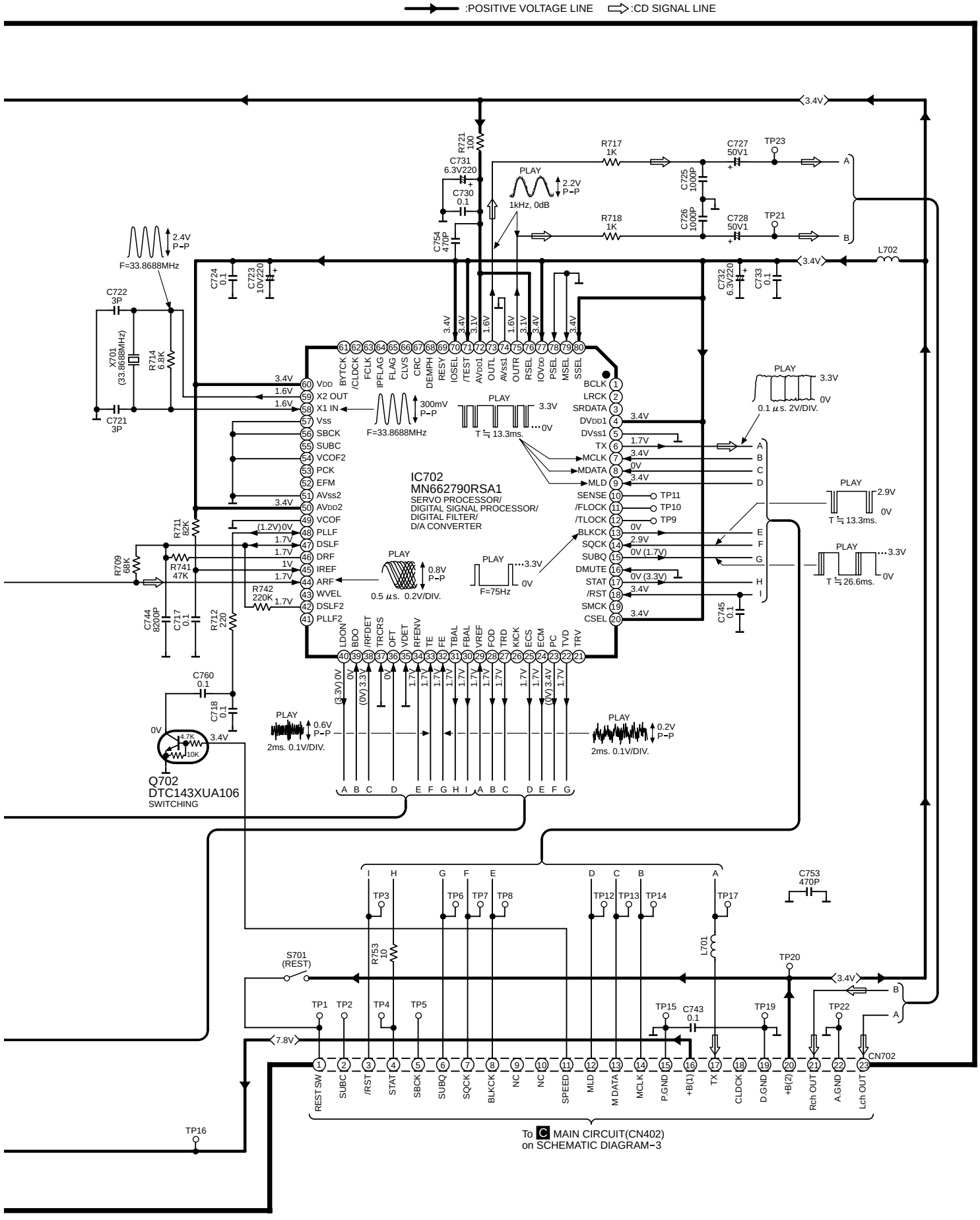
12 Schematic Diagram

SCHEMATIC DIAGRAM–1

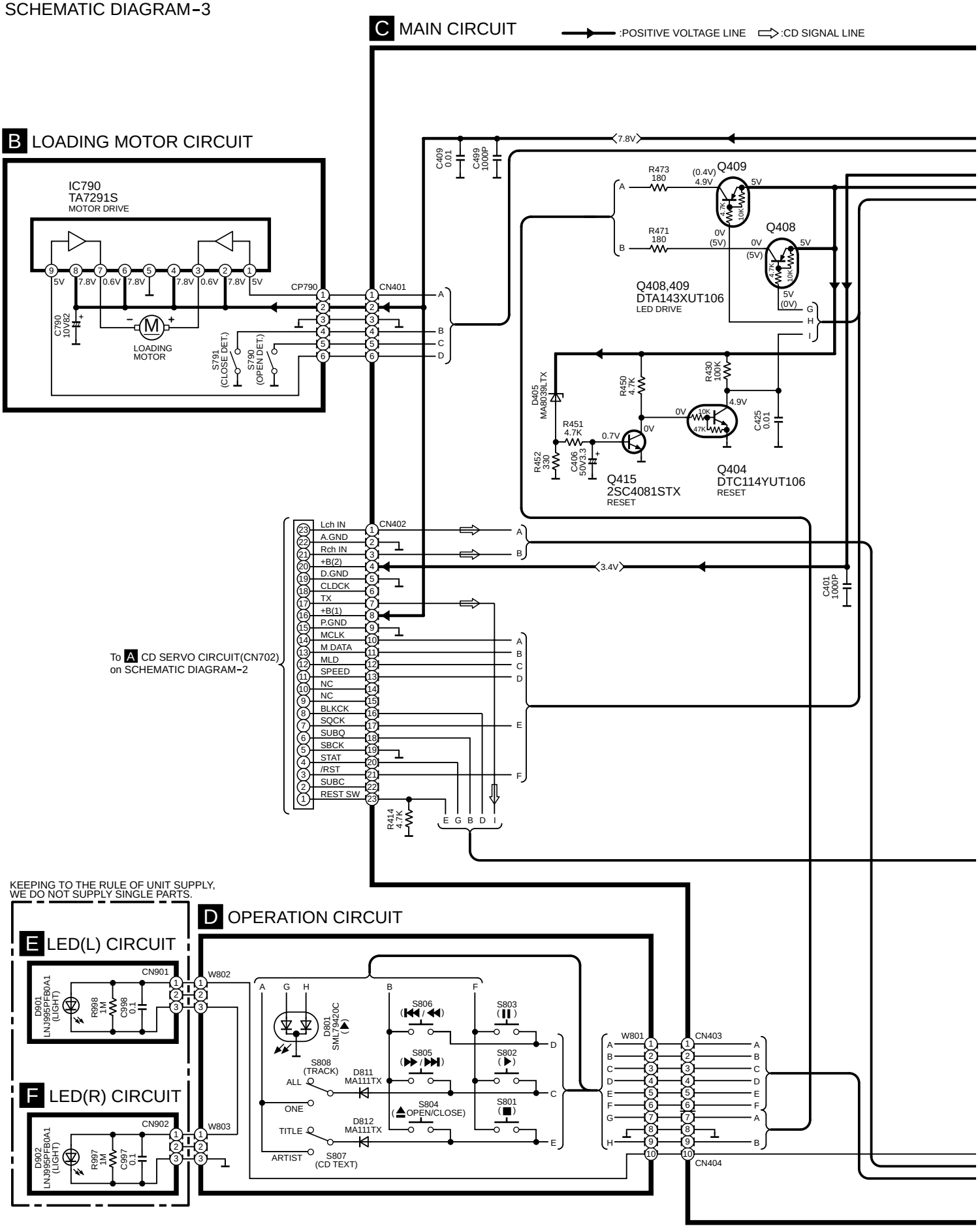
NOTE:
The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM–1" or "SCHEMATIC DIAGRAM–2" indicates fhe schematic diagram serial number located on the left corner in the schematic diagram.



SCHEMATIC DIAGRAM–2

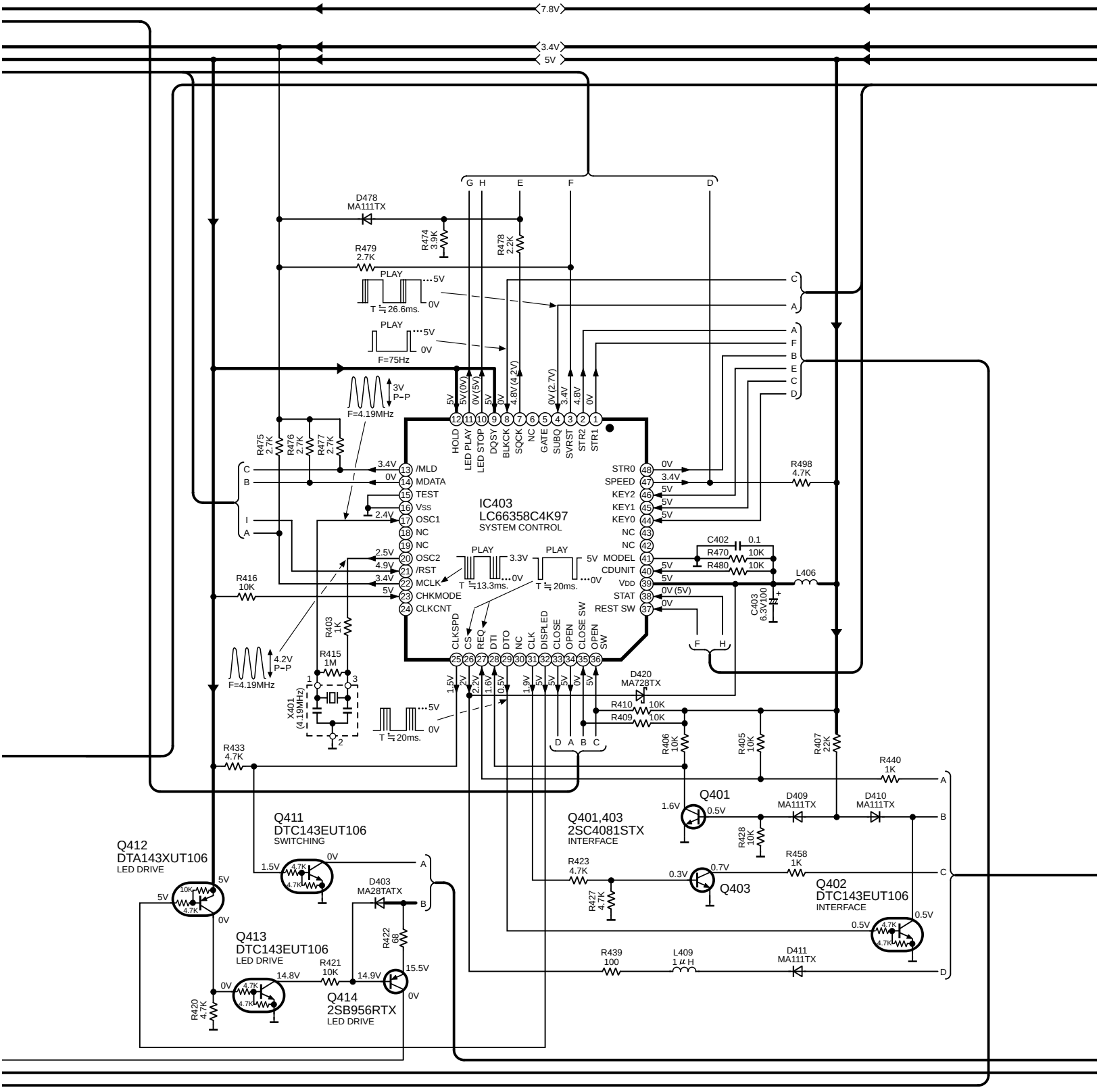


SCHEMATIC DIAGRAM–3



SCHEMATIC DIAGRAM–4

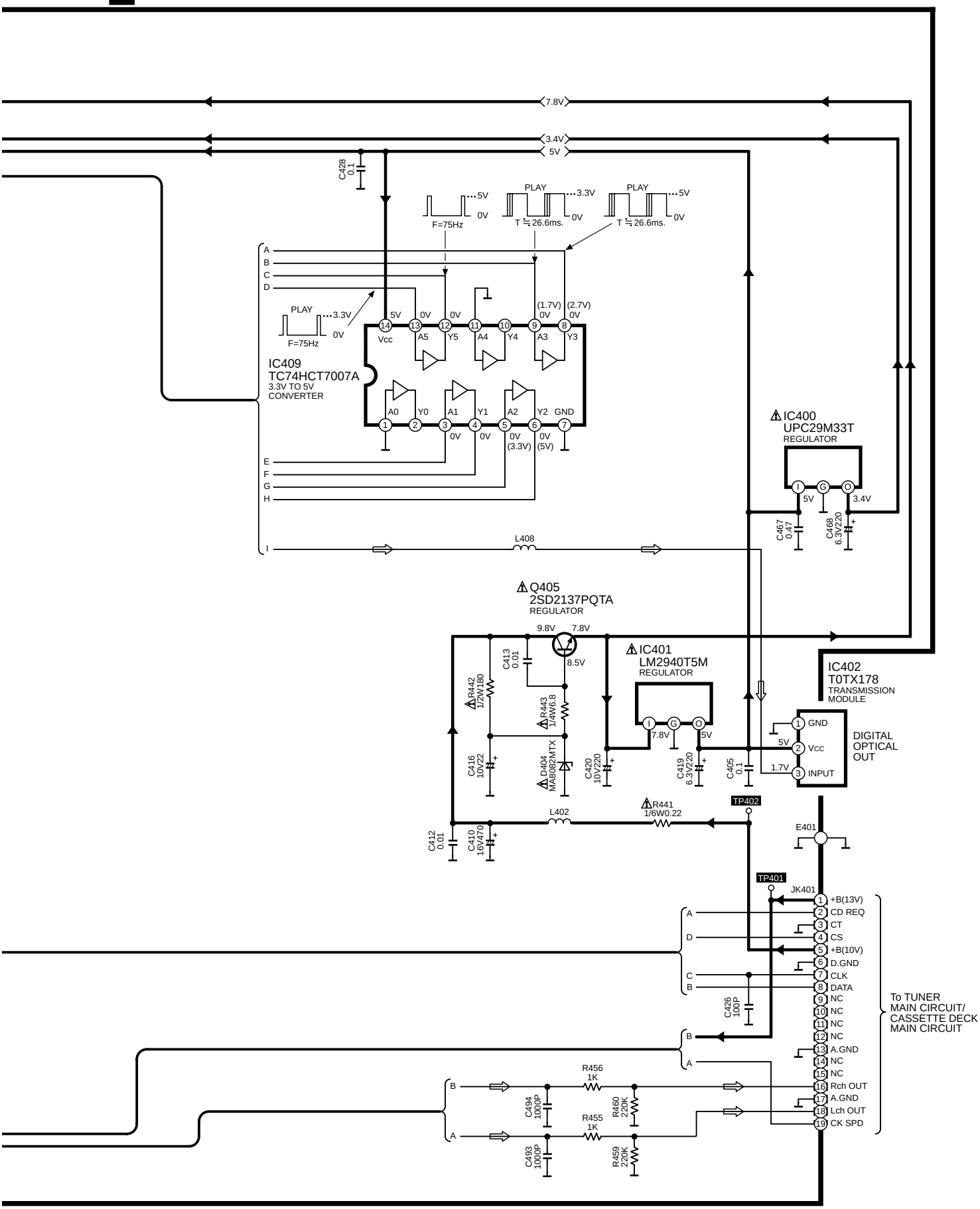
:POSITIVE VOLTAGE LINE



SCHEMATIC DIAGRAM–5

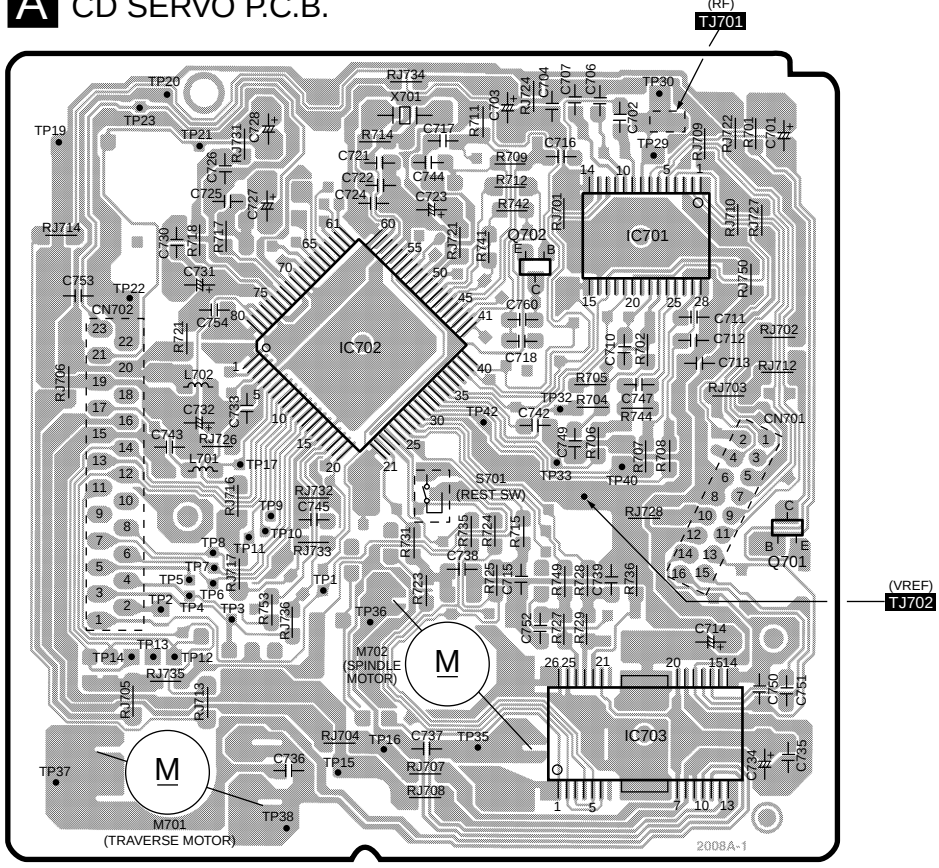
C MAIN CIRCUIT

:POSITIVE VOLTAGE LINE :CD SIGNAL LINE



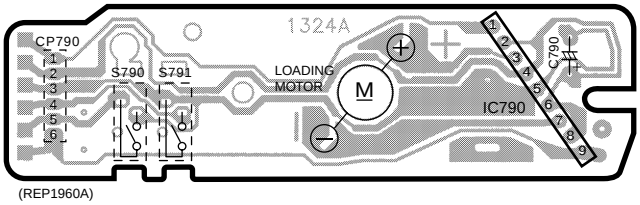
13 Printed Circuit Board Diagram

A CD SERVO P.C.B.



(REP2772A-N)

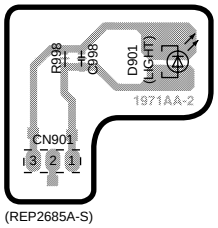
B LOADING MOTOR P.C.B.



(REP1960A)

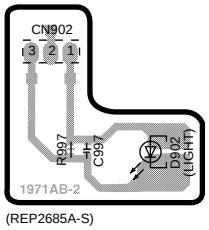
[Keeping to the rule of unit supply, we do not supply single parts.]

E LED(L) P.C.B.



(REP2685A-S)

F LED(R) P.C.B.

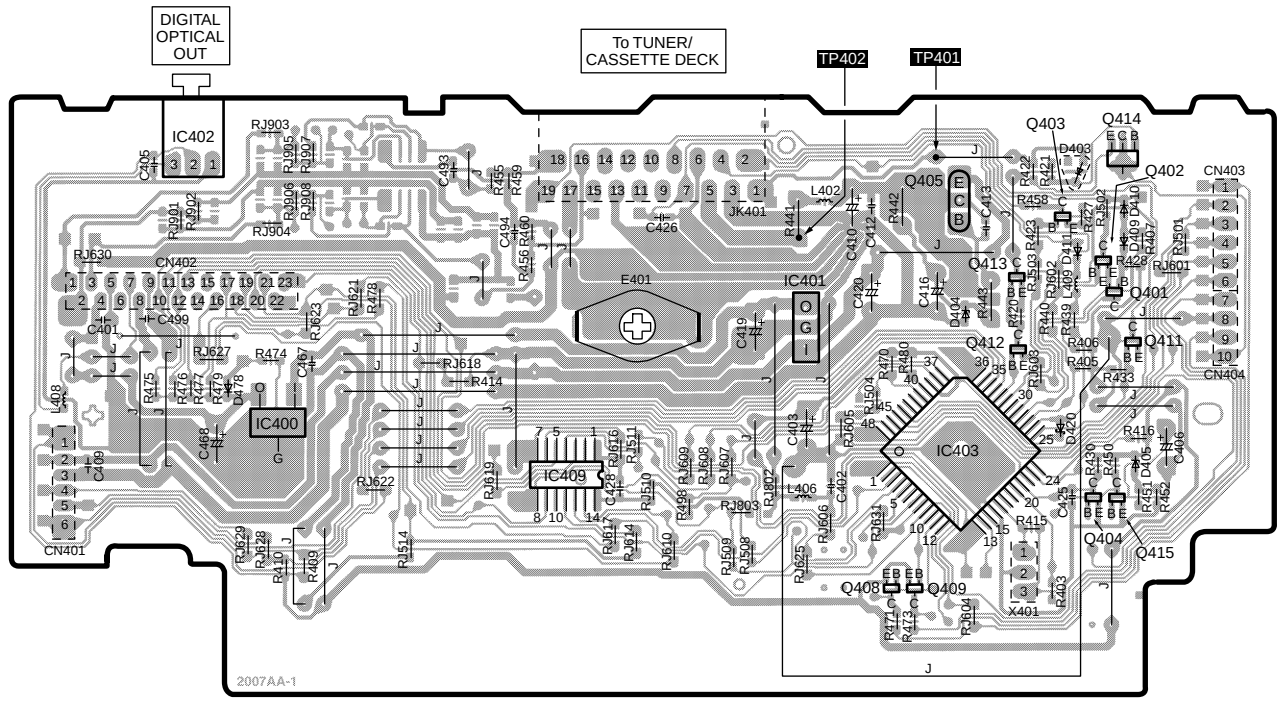


(REP2685A-S)

■ ELECTRICAL PARTS LOCATION

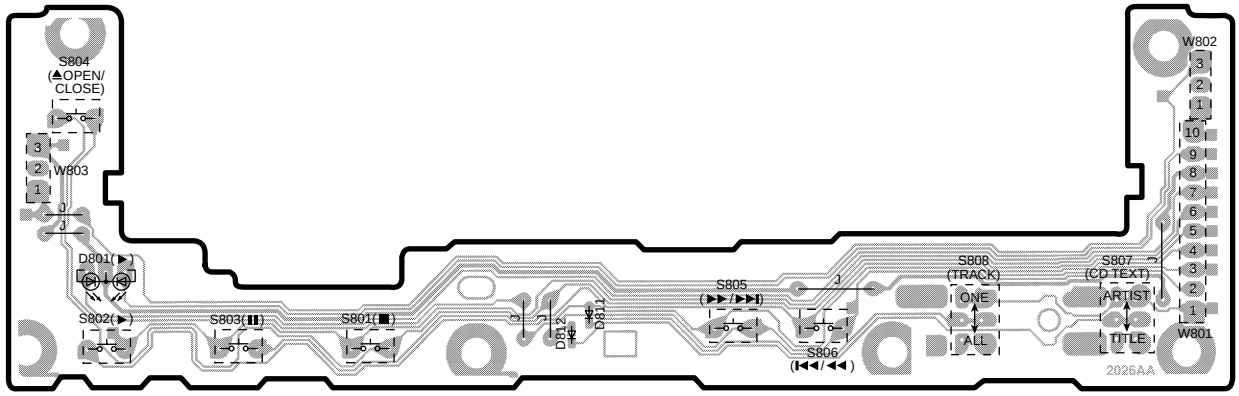
Ref. No.	Lo. No.	Ref. No.	Lo. No.
A CD SERVO P.C.B.			
IC701	2D	R753	4B
IC702	3B	RJ701	2C
IC703	4D	RJ702	2D
Q701	3D	RJ703	3D
Q702	2C	RJ704	4B
L701	3B	RJ705	4A
L702	3B	RJ706	3A
X701	2C	RJ707	4C
S701	3C	RJ708	5C
CN701	3D	RJ709	2D
CN702	3A	RJ710	2D
M701	4A	RJ712	3D
M702	4C	RJ713	4B
TJ701	2D	RJ714	2A
TJ702	3C	RJ716	3B
TP1	4B	RJ717	4B
TP2	4A	RJ721	2C
TP3	4B	RJ722	2D
TP4	4B	RJ724	1C
TP5	4B	RJ726	3B
TP6	4B	RJ727	2D
TP7	4B	RJ728	3D
TP8	3B	RJ731	2B
TP9	3B	RJ732	3B
TP10	3B	RJ733	3B
TP11	3B	RJ734	1C
TP12	4B	RJ735	4A
TP13	4A	RJ736	4B
TP14	4A	RJ750	2D
TP15	4B	C701	2D
TP16	4B	C702	2D
TP17	3B	C703	1C
TP19	2A	C704	1C
TP20	1A	C706	1C
TP21	2B	C707	1C
TP22	2A	C710	3D
TP23	1A	C711	2D
TP29	2D	C712	3D
TP30	1D	C713	3D
TP32	3C	C714	4D
TP33	3C	C715	4C
TP35	4C	C716	2C
TP36	4B	C717	2C
TP37	5A	C718	3C
TP38	5B	C721	2B
TP40	3D	C722	2B
TP42	3C	C723	2C
R701	2D	C724	2B
R702	3D	C725	2B
R704	3C	C726	2B
R705	3C	C727	2B
R706	3C	C728	2B
R707	3D	C730	2B
R708	3D	C731	2B
R709	2C	C732	3B
R711	2C	C733	3B
R712	2C	C734	4D
R714	2B	C735	4D
R715	3C	C736	4B
R717	2B	C737	4C
R718	2B	C738	4C
R721	3B	C739	4C
R723	4C	C742	3C
R724	3C	C743	3A
R725	4C	C744	2C
R727	4C	C745	3B
R728	4C	C747	3D
R729	4C	C749	3C
R731	3C	C750	4D
R735	3C	C751	4D
R736	4D	C752	4C
R741	2C	C753	2A
R742	2C	C754	2B
R744	3D	C760	2C
R749	4C		
B LOADING MOTOR P.C.B.			
IC790	6D	CP790	6B
S790	6B	C790	6D
S791	6B		
E LED(L) P.C.B.			
D901	7B	R998	7A
CN901	8A	C998	7B
F LED(R) P.C.B.			
D902	8D	R997	8C
CN902	7C	C997	8C

C MAIN P.C.B.



(REP2773A-M)

D OPERATION P.C.B.

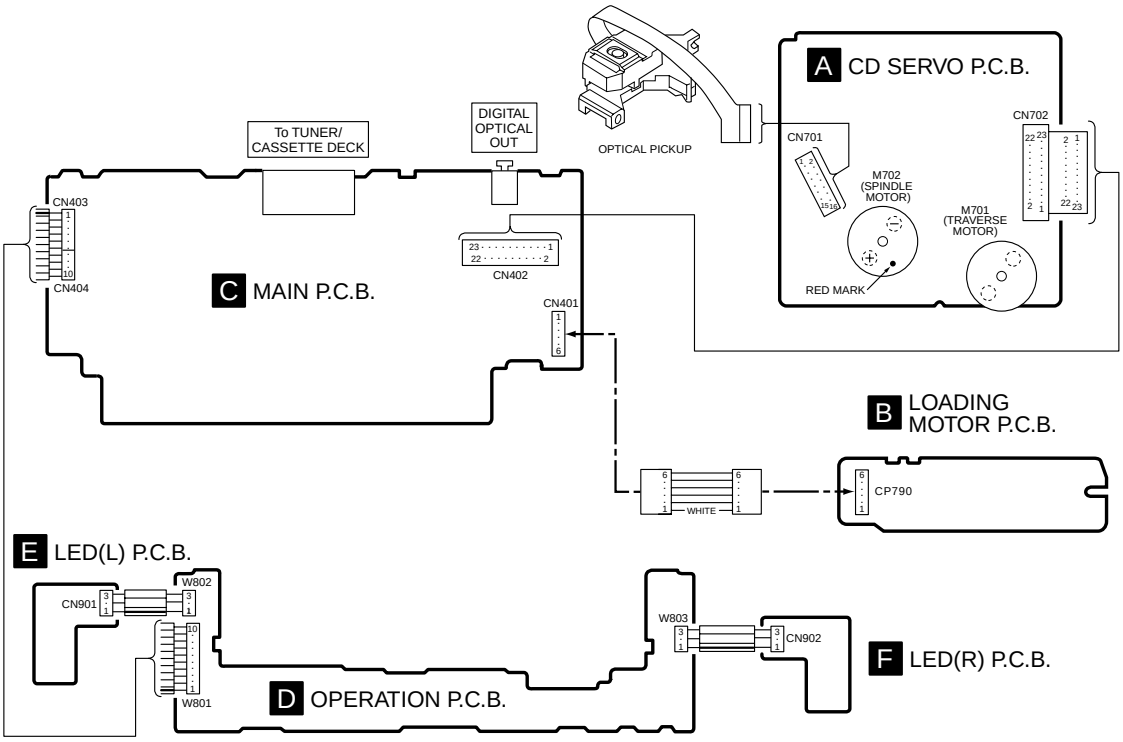


(REP2774A-S)

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
C MAIN P.C.B.															
IC400	3B	D404	2E	R403	4E	R440	2E	R477	3B	RJ605	3E	RJ630	2A	C410	2E
IC401	2D	D405	3F	R405	3F	R441	2D	R478	2B	RJ606	3D	RJ631	3E	C412	2E
IC402	2B	D409	2F	R406	2F	R442	2E	R479	3B	RJ607	3D	RJ802	3D	C413	2E
IC403	3E	D410	2F	R407	2F	R443	2E	R480	3E	RJ608	3D	RJ803	3D	C416	2E
IC409	3C	D411	2F	R409	3B	R450	3F	R498	3D	RJ609	3D	RJ901	2B	C419	2D
Q401	2F	D420	3F	R410	3B	R451	3F	RJ501	2F	RJ610	3D	RJ902	2B	C420	2E
Q402	2F	D478	3B	R414	3C	R452	3F	RJ502	2F	RJ614	3D	RJ903	1B	C425	3F
Q403	2F	L402	2D	R415	3E	R455	2C	RJ503	2E	RJ616	3D	RJ904	2B	C426	2D
Q404	3F	L406	3D	R416	3F	R456	2C	RJ504	3E	RJ617	3D	RJ905	2B	C428	3D
Q405	2E	L408	3A	R420	2E	R458	2E	RJ508	3D	RJ618	3C	RJ906	2B	C467	3B
Q408	4E	L409	2F	R421	2E	R459	2C	RJ509	3D	RJ619	3C	RJ907	2B	C468	3B
Q409	4E	X401	3E	R422	2E	R460	2C	RJ510	3D	RJ621	2B	RJ908	2B	C493	2C
Q411	2F	CN401	3A	R423	2E	R470	3E	RJ511	3D	RJ622	3B	C401	2A	C494	2C
Q412	2E	CN402	2B	R427	2F	R471	4E	RJ514	3C	RJ623	2B	C402	3D	C499	2A
Q413	2E	CN403	2F	R428	2F	R473	4E	RJ601	2F	RJ625	3D	C403	3D		
Q414	2F	CN404	2F	R430	3F	R474	3B	RJ602	2F	RJ627	2B	C405	2A		
Q415	3F	JK401	2D	R433	3F	R475	3A	RJ603	3E	RJ628	3B	C406	3F		
D403	2F	E401	2D	R439	2F	R476	3B	RJ604	4E	RJ629	3B	C409	3A		
D OPERATION P.C.B.															
D801	6A	D812	6C	S802	6A	S804	5A	S806	6E	S808	6E	W802	5F		
D811	6C	S801	6B	S803	6B	S805	6D	S807	6F	W801	6F	W803	5A		

14 Wiring Connection Diagram



15 Terminal Function of IC´s

15.1. IC701 (AN8839NSBE2): SERVO AMP

Pin No.	Mark	I/O Division	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	VCC	I	Power supply terminal
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	APC amp. input terminal
7	LD	O	APC amp. output terminal("L": laser ON)
8	RF	O	RF adding output terminal
9	RFIN	I	AGC input terminal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Drop out output terminal("H": Drop out)
13	LDON	I	Laser ON signal input terminal("H": laser ON)
14	GND	—	GND terminal
15	/RFDET	O	RF detection signal output terminal ("H": detection)
16	PDOWN	—	Connected to GND
17	OFTR	O	Off track signal output terminal ("H": off track)
18	NC	—	—
19	ENV	O	RF envelope signal output terminal
20	NC	—	—
21	NC	—	—
22	TEN	I	Tracking error amp input terminal
23	TEOUT	O	Tracking error amp. output terminal
24	FEOUT	O	Focus error amp. output terminal
25	FEN	I	Focus error amp. input terminal
26	VREF	O	VREF output terminal
27	TBAL	I	Tracking balance adj. input terminal
28	FBAL	I	Focus balance adj. input terminal

15.2. IC702 (MN662790RSA1): SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR/DIGITAL FILTER/D-A CONVERTER

Pin No.	Mark	I/O Division	Function
1	BCLK	O	Serial data bit clock output terminal(Not used, open)
2	LRCK	O	L/R discriminating signal output terminal(Not used, open)
3	SRDATA	O	Serial data output terminal(Not used, open)
4	DV_{DD1}	I	Power supply (digital circuit) terminal
5	DV_{SS1}	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal output terminal
7	MCLK	I	Microcomputer command clock signal input terminal(Latching on the data by rising edge)
8	MDATA	I	Microcomputer command data signal input terminal
9	MLD	I	Microcomputer command load signal input terminal
10	SENSE	O	Sense signal output terminal (OFT, FESL, NACEND, NAJEND, DATA, SFG) (Not used)
11	/FLOCK	O	Focus servo lead-in signal output terminal ("L": lead-in) (Not used)
12	/TLOCK	O	Tracking servo lead-in signal output termianl ("L": lead-in) (Not used)
13	BLKCK	O	Sub-code block clock signal output terminal (fBLKCK=75 Hz: normal play)
14	SQCK	I	Sub-code Q resistor external clock signal input terminal
15	SUBQ	O	Sub-code Q code output terminal
16	DMUTE	I	Muting input terminal ("L": mute) (Connected to GND)
17	STAT	O	Status signal output terminal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
18	/RST	O	Reset input terminal
19	SMCK	O	Not used, open
20	CSEL	O	Power supply terminal
21	TRV	O	Traverse forced feed terminal(Not used, open)
22	TVD	O	Traverse drive signal output terminal
23	PC	O	Spindle motor drive signal output terminal ("L": ON)
24	ECM	O	Spindle motor drive signal output terminal (Forced mode)
25	ECS	O	Spindle motor drive signal output terminal (Servo error signal)
26	KICK	O	Kick pulse output terminal (Not used, open)
27	TRD	O	Tracking drive signal output terminal
28	FOD	O	Focus drive signal output terminal
29	VREF	I	VREF input terminal
30	FBAL	O	Focus balance adj. output terminal
31	TBAL	O	Tracking balance adj. output terminal
32	FE	I	Focus error signal input terminal(analog input)
33	TE	I	Tracking error signal input terminal(analog input)
34	RFENV	I	RF envelope signal input terminal
35	VDET	I	Oscillation det. signal input terminal("H": det.) (Connected to GND)
36	OFT	I	Off track signal input terminal("H": off track)
37	TRCRS	I	Track cross signal input terminal(Connected to GND)
38	/RFDET	I	RF detection signal input terminal("L": detection)
39	BDO	I	Dropout signal input terminal ("H": dropout)
40	LDON	O	Laser ON signal output terminal ("H": ON)
41	PLLF2	—	PLL loop filter 2 terminal(Not used, open)
42	DSLF2	—	DSL loop filter 2 terminal
43	WVEL	O	Double velocity status signal output terminal ("H": double) (Not used, open)
44	ARF	I	RF signal input terminal
45	IREF	I	Reference current input terminal
46	DRF	I	DSL bias input terminal
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	—	VCO loop filter terminal(Not used, connected to GND)
50	AV_{DD2}	I	Power supply (analog circuit) terminal

Pin No.	Mark	I/O Division	Function
51	AV_{SS2}	—	GND (analog circuit) terminal
52	EFM	O	EFM signal output terminal(Not used, open)
53	PCK	O	PLL extract clock output terminal (fPCK=4.321 MHz: normal play)(Not used, open)
54	VCOF2	—	VCO loop filter 2 terminal(Connected to GND)
55	SUBC	O	Sub-code serial data output terminal(Not used, open)
56	SBCK	I	Sub-code serial data clock input terminal (Connected to GND)
57	V_{SS}	—	GND terminal
58	X1 IN	I	Crystal oscillator input terminal(f=33.8688 MHz)
59	X2 OUT	O	Crystal oscillator output terminal(f=33.8688 MHz)
60	V_{DD}	I	Power supply (oscillation circuit) terminal
61	BYTCK	O	Byte clock output terminal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal output terminal (fCLDCK=7.35 kHz: normal play) (Not used, open)
63	FCLK	O	Crystal frame clock signal output terminal (fCLK=7.35 kHz, double velocity 14.7 kHz) (Not used, open)
64	IPFLAG	O	Data error flag output terminal("H": interpolation) (Not used, open)
65	FLAG	O	Flag output terminal (Not used, open)
66	CLVS	O	Spindle servo phase synchro signal output terminal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check output terminal("H": ON, "L": NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal output terminal ("H": ON) (Not used, open)
69	RESY	O	Re-synchronizing signal of frame sync.output terminal (Not used, open)
70	IOSEL	I	Power supply (digital circuit) terminal
71	/TEST	I	Test input terminal (Connected to power supply)
72	AV_{DD1}	I	Power supply (analog circuit) terminal
73	OUTL	O	L ch audio signal output terminal
74	AV_{SS1}	—	GND terminal
75	OUTR	O	R ch audio signal output terminal
76	RSEL	I	RF signal polarity designation input terminal (Connected to power supply)
77	IOVDD	I	Crystal oscillator frequency designation input terminal(Connected to power supply)
78	PSEL	I	Test input terminal(Usually:"H") (Connected to GND)
79	MSEL	I	Output frequency switching terminal of SMAC("H":SMCK=8.4672MHz, "L":SMCK=4.2336MHz) (Connected to GND)
80	SSEL	I	Output mode switching terminal of SUBQ("H":Q-code buffer using mode) (Connected to power supply)

15.3. IC703(AN8739SBE2):FOCUS COIL/TRACKING COIL/ TRAVERSE MOTOR/ SPINDLE MOTOR DRIVE

Pin No.	Mark	I/O Division	Function
1	/RST	—	Reset output terminal (Not used, open)
2	NC	—	Not used
3	IN2	I	Motor driver (2) input terminal
4	PC2	I	PC2 (power cut) input terminal
5	NC	—	Not used
6	IN1	I	Motor driver (1) input terminal
7	PVCC1	I	Power supply (for driver) terminal
8	PGND1	—	GND (for driver) terminal (1)
9	NC	—	Not used
10	D1-	O	Traverse motor driver (1) output terminal (-)
11	D1+	O	Traverse motor driver (1) output terminal (+)
12	D2-	O	Spindle motor driver (2) output terminal (-)
13	D2+	O	Spindle motor driver (2) output terminal (+)
14	D3-	O	Tracking coil signal output terminal (-)
15	D3+	O	Tracking coil signal output terminal (+)
16	D4-	O	Focus coil signal output terminal (-)
17	D4+	O	Focus coil signal output terminal (+)
18	NC	—	Not used
19	PGND2	—	GND (for driver) terminal (2)
20	PVCC2	I	Power supply (for driver) terminal (2)
21	VCC	I	Power supply terminal
22	VREF	I	Reference voltage input terminal
23	IN4	I	Motor driver (4) input terminal
24	IN3	I	Motor driver (3) input terminal
25	RSTIN	I	Reset input terminal (Connected to GND)
26	NC	—	Not used, connected to GND

15.4. IC403(LC66358C4K97):SYSTEM CONTROL

Pin No.	Mark	I/O Division	Function
1	STR1	O	Key switch 1 det. terminal
2	STR2	O	Key switch 2 det. terminal
3	SVRST	O	Reset signal terminal of servo IC (IC702)
4	SUBQ	I	Sub-code data input terminal
5	GATE	O	Select signal output terminal (Not used, open)
6	NC	—	Not used, open
7	SQCK	O	Sub-code registor clock output terminal
8	BLKCK	I	Sub-code block signal input terminal
9	DQSY	I	Reading permission terminal of data (Not used, connected to power supply)
10	LED STOP	O	LED drive signal terminal
11	LED PLAY	O	
12	HOLD	I	Not used, connected to power supply
13	/MLD	O	Command load signal terminal to IC702
14	MDATA	O	Command data signal terminal to IC702
15	TEST	—	Not used, connected to GND
16	V_{SS}	—	GND terminal
17	OSC1	I	Crystal oscillator connected terminal (f=4.19MHz)
18	NC	—	Not used, open
19			
20	OSC2	O	Crystal oscillator connected terminal (f=4.19MHz)
21	/RST	I	Reset signal input terminal
22	MCLK	O	Command clock output terminal to IC702

Pin No.	Mark	I/O Division	Function
23	CHK MODE	I	Not used (Connected to power supply through registor)
24	CLK CNT	O	Clock control signal output terminal (Not used, open)
25	CLK SPD	O	Communication clock velocity select input terminal
26	CS	O	Communication request receiving signal terminal to FL drive/ system control IC
27	REQ	I	Communication request signal terminal to FL drive/ system control IC
28	DTI	I	Data input terminal from FL drive/ system control IC
29	DTO	O	Data output terminal to FL drive/ system control IC
30	NC	—	Not used, open
31	CLK	O	Clock terminal to FL drive/ system control IC
32	DISPLED	O	LED drive signal output terminal
33	CLOSE	O	Loading motor "CLOSE" command signal output terminal
34	OPEN	O	Loading motor "OPEN" command signal output terminal
35	CLOSE SW	I	Disc tray "CLOSE" det. switch signal input terminal
36	OPEN SW	I	Disc tray "OPEN" det. switch signal input terminal
37	REST SW	I	Rest position det. signal input terminal
38	STAT	I	Status signal terminal
39	V_{DD}	I	Power supply terminal
40	CDUNIT	I	Connected to power supply through registor
41	MODEL	I	
42	NC	—	Not used, open
43	NC	—	
44	KEY0	I	Key switch 0 det. input terminal
45	KEY1	I	Key switch 1 det. input terminal
46	KEY2	I	Key switch 2 det. input terminal
47	SPEED	O	PLL filter of CD unit select output terminal
48	STR0	O	Key switch 0 det.output terminal

16 Replacement Parts List

Notes:

*Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
*Warning: This product uses a laser diode. Refer to caution statements.

*ACHTUNG:Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.
*Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000K (OHM)

*The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RHD30007-S	SCREW>	4	
2	XTB3+5JFZ	SCREW	4	
3	XTBS3+8JFZ1	SCREW	7	
4	RKM0363-1S	CABINET	1	
5	RGK0974-1S	TRAY ORNAMENT	1	
7	RKA0098-K	FOOT	4	
8	REP2685A-S	LED(L R)P.C.B.ASS'Y	1	
9	RGG0146A-1S	FRONT PANEL	1	
11	XTB3+12JFZ	SCREW	3	
12	REZ1056-2	FFC(23P)	1	
13	REX0898	CONNECTOR ASS'Y(6P)	1	
14	RGP0641-1S	SUB PANEL	1	
15	XTB3+8JFZ	SCREW	4	
16	RGL0391-Q	PANEL LIGHT(L)	1	
17	RGL0392-Q	PANEL LIGHT(R)	1	
19	XTBS26+8J	SCREW	8	
21	RGU1600-1S	OPERATION BUTTON	1	
22	RGL0386-Q	PANEL LIGHT	1	
25	RGK0969-1S	SIDE PANEL(L)	1	
26	RGK0970-1S	SIDE PANEL(R)	1	
301	RFKJXDT07-K	LOADING CHASSIS ASS'Y	1	
301-1	RDG0142	LOADING GEAR	1	
301-2	RDG0193	LOADING GEAR(1)	1	
301-3	RDP0065	PULLEY	1	
302	REM0019	LOADING MOTOR ASS'Y	1	
304	RGQ0144-K	DISC TRAY	1	
305 ⚠	RAE0152Z-1	TRAVERSE DECK ASS'Y	1	
305-1	SHGD113-1	FLOATING RUBBER	3	
305-2	SNSD38	SCREW	2	
306	RMS0350-1	PIN(B)	1	
307	RMS0627	PIN(A)	1	
308	RME0109	SPRING(1)	2	
309	RME0142	SPRING(2)	1	
310	RMR0698-K1	TRAVERSE CHASSIS	1	
311	XTV2+6G	SCREW	2	
312	RME0063	LOCK LEVER SPRING	1	
313	RMM0079-1	SLIDE PLATE(1)	1	
314	RML0178-1	LOCK LEVER	1	
315	RFKNLPG440-K	DRIVE RUCK ASS'Y	1	
316	RHD20009-1	SCREW	1	
317	RME0087	SPRING	1	
318	RML0349	CONVERSION LEVER	1	
319	RMM0059-1	SLIDE PLATE(2)	1	
320	RMR0334	MAGNET HOLDER	1	
321	RHM245ZA	MAGNET	1	
322	RXQ0380	DISC HOLDER	1	
323	XTN26+6G	SCREW	3	
324	RFKNLCH530EA	DISC CLAMPER ASS'Y	1	
325	XYN2+F6FZ	SCREW	2	
326	RMG0158	BELT	1	
327	XTN2+6G	SCREW	1	
C401	ECUV1H102KBN	50V 1000P	1	
C402	ECUV1E104ZFN	25V 0.1U	1	
C403	ECEA0JKS101	6.3V 100U	1	
C405	ECUV1E104ZFN	25V 0.1U	1	
C406	ECEA1HKS3R3	50V 3.3U	1	
C409	ECUV1E103ZFN	25V 0.01U	1	
C410	ECA1CM471	16V 470UF	1	
C412,13	ECUV1E103ZFN	25V 0.01U	2	
C416	ECEA1AKS220	10V 22U	1	
C419,20	ECEA1AKS221	10V 220U	2	
C425	ECUV1E103ZFN	25V 0.01U	1	
C426	ECUV1H101JCN	50V 100P	1	
C428	ECUV1E104ZFN	25V 0.1U	1	
C437,38	ECUV1E104ZFN	25V 0.1U	2	
C467	ECUV1C474ZFN	16V 0.47U	1	
C468	ECEA1AKS221	6.3V 220U	1	
C493,94	ECUV1H102KBN	50V 1000P	2	
C499	ECUV1H102KBN	50V 1000P	1	
C701	ECEA0JKA330I	6.3V 33U	1	
C702	ECUVNE104MBN	16V 0.1U	1	
C703	ECEA0JKS101	6.3V 100U	1	
C704	ECUVNE104MBN	16V 0.1U	1	
C706	ECUV1H272KBN	50V 2700P	1	
C707	ECUV1E273KBN	25V 0.027U	1	
C710	ECUV1H121KCN	50V 120P	1	
C711,12	ECUVNE104ZFN	25V 0.1U	2	
C713	ECUVNE104MBN	16V 0.1U	1	
C714	ECEA0JKS101	6.3V 100U	1	
C715	ECUV1H272KBN	50V 2700P	1	
C716	ECUV1H821KBN	50V 820P	1	
C717	ECUVNE104ZFN	25V 0.1U	1	
C718	ECUV1E104KBN	25V 0.1U	1	
C721,22	ECUV1H030CCN	50V 3P	2	
C723	ECEA1AKS221	10V 220U	1	
C724	ECUVNE104MBN	16V 0.1U	1	
C725,26	ECUV1H102KBN	50V 1000P	2	
C727,28	ECEA1HKS010	50V 1U	2	
C730	ECUVNE104ZFN	25V 0.1U	1	
C731,32	ECEA1AKS221	6.3V 220U	2	
C733	ECUVNE104MBN	16V 0.1U	1	
C734	ECEA1AKS221	10V 220U	1	
C735-37	ECUVNE104ZFN	25V 0.1U	3	
C738	ECUV1H103KBN	50V 0.01U	1	
C739	ECUV1H152KBN	50V 1500P	1	
C742	ECUV1E273KBN	25V 0.027U	1	
C743	ECUVNE104ZFN	25V 0.1U	1	
C744	ECUV1E822KBN	25V 8200P	1	
C745	ECUV1E104KBN	25V 0.1U	1	
C747	ECUV1H181KCN	50V 180P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C749	ECUV1H222KBN	50V 2200P	1	
C750,51	ECUVNE104MBN	16V 0.1U	2	
C752	ECUV1H102KBN	50V 1000P	1	
C753	ECUV1H471KBM	50V 470P	1	
C754	ECUV1H471KBN	50V 470P	1	
C760	ECUV1E104KBN	25V 0.1U	1	
C790	ECA1AKF820	10V 82U	1	
CN401	RJP6G18ZA	CONNECTOR(6P)	1	
CN402	RJS1A6823	CONNECTOR(23P)	1	
CN403	RJS1A6606	CONNECTOR(6P)	1	
CN404	RJS1A6604	CONNECTOR(4P)	1	
CN701	RJU035T016-1	CONNECTOR(16P)	1	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	1	
CP790	RJP6G17ZA	CONNECTOR(6P)	1	
D403	MA28TATX	DIODE	1	
D404 ⚠	MA8082M	DIODE	1	
D405	MA8039LTX	DIODE	1	
D409-11	MA111TX	DIODE	3	
D420	MA728TX	DIODE	1	
D478	MA111TX	DIODE	1	
D801	SML79420C	LED	1	
D811,12	MA111TX	DIODE	2	
IC400 ⚠	UPC29M33T	IC	1	
IC401 ⚠	LM2940T5	IC	1	
IC402	T0TX178	IC	1	
IC403	LC66358C4K97	IC	1	
IC409	TC74HCT7007A	IC	1	
IC701	AN8839NSBE2	IC	1	
IC702	MN662790RSA	IC	1	
IC703	AN8739SBE2	IC	1	
IC790	TA7291S	IC	1	
JK401	RJT065K19	SYSTEM CONNECTOR(19P)	1	
L402	RLBN300AV-W	COIL	1	
L406	RLBN601V-W	COIL	1	
L408	RLBN601V-W	COIL	1	
L409	RLQP1R0KT1-Y	COIL	1	
L701,02	RLBN102V-Y	COIL	2	
PCB1	REP2773A-M	MAIN P.C.B.	1	(RTL)
PCB3	REP2774A-S	PANEL P.C.B.	1	(RTL)
PCB4	REP1960A	LOADING MOTOR P.C.B.	1	(RTL)
PCB5	REP2772A-N	SERVO P.C.B.	1	(RTL)
Q401	2SC4081STX	TRANSISTOR	1	
Q402	DTC143EUT106	TRANSISTOR	1	
Q403	2SC4081STX	TRANSISTOR	1	
Q404 ⚠	DTC114YUT106	TRANSISTOR	1	
Q405	2SD2137PQTA	TRANSISTOR	1	
Q408,09	DTA143XUT106	TRANSISTOR	2	
Q411	DTC143EUT106	TRANSISTOR	1	
Q412	DTA143XUT106	TRANSISTOR	1	
Q413	DTC143EUT106	TRANSISTOR	1	
Q414	2SB956RTX	TRANSISTOR	1	
Q415	2SC4081STX	TRANSISTOR	1	
Q701	2SB709S	TRANSISTOR	1	
Q702	DTC143XUA106	TRANSISTOR	1	
R403	ERJ6GEYJ102Z	1/10W 1K	1	
R405,06	ERJ6GEYJ103V	1/10W 10K	2	
R407	ERJ6GEYJ223V	1/10W 22K	1	
R409	ERJ8GEYJ103V	1/8W 10K	1	
R410	ERJ6GEYJ103V	1/10W 10K	1	
R414	ERJ8GEYJ472V	1/8W 4.7K	1	
R415	ERJ6GEYJ105	1/10W 1M	1	
R416	ERJ6GEYJ103V	1/10W 10K	1	

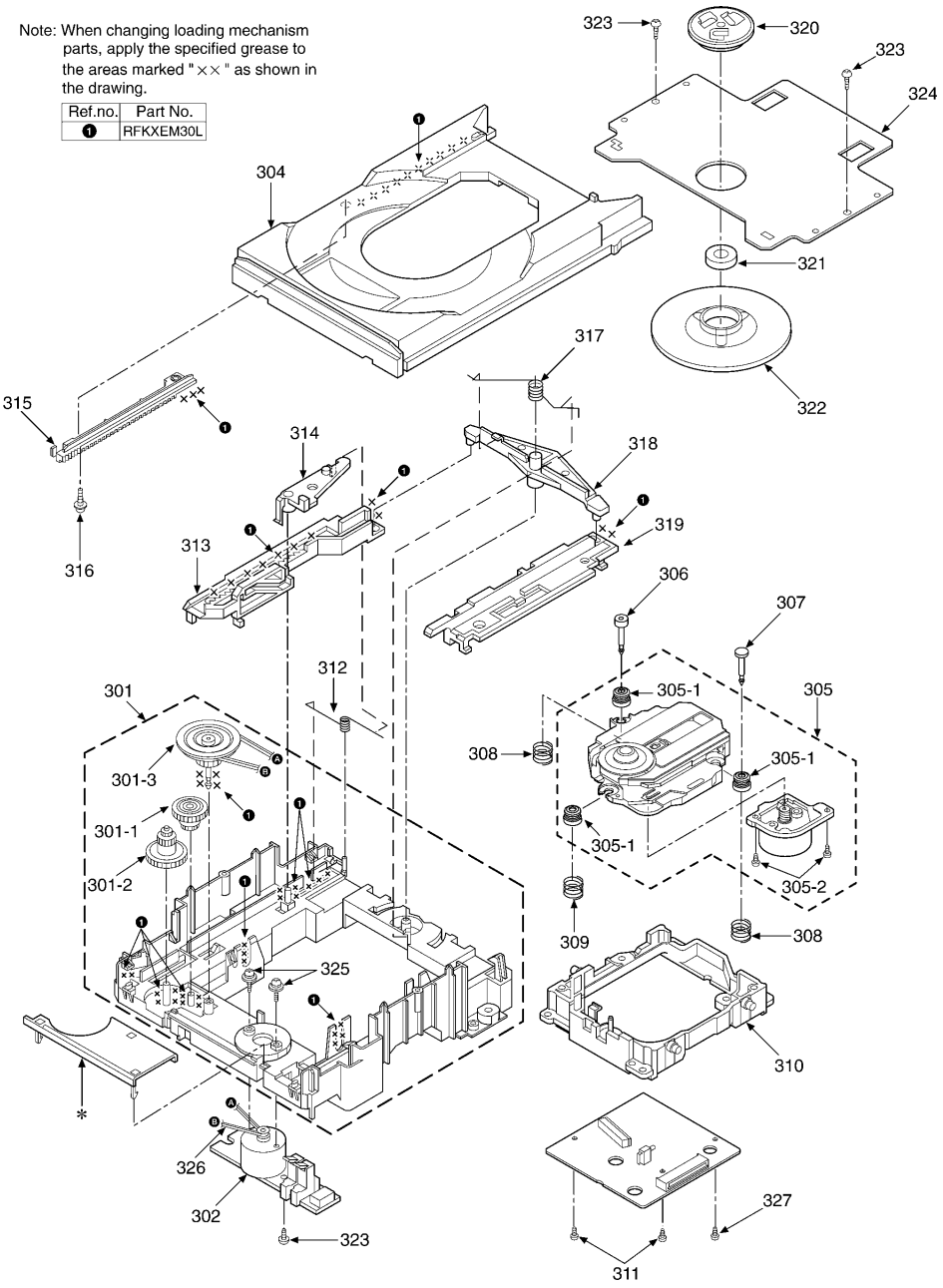
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R420	ERJ6GEYJ472V	1/10W 4.7K	1	
R421	ERJ6GEYJ103V	1/10W 10K	1	
R422	ERJ6GEYJ680V	1/10W 68	1	
R423	ERJ8GEYJ472V	1/8W 4.7K	1	
R427	ERJ6GEYJ472V	1/10W 4.7K	1	
R428	ERJ6GEYJ103V	1/10W 10K	1	
R430	ERJ6GEYJ104V	1/10W 100K	1	
R433	ERJ6GEYJ472V	1/10W 4.7K	1	
R439	ERJ8GEYJ101V	1/8W 100	1	
R440	ERJ8GEYJ102V	1/8W 1K	1	
R441 ⚠	ERQ16NKWR22E	1/6W 0.22	1	
R442 ⚠	ERDS1FJ181	1/2W 180	1	
R443 ⚠	ERD2FCJ6R8	1/4W 6.8	1	
R445	ERJ6GEYJ102Z	1/10W 1K	1	
R450,51	ERJ6GEYJ472V	1/10W 4.7K	2	
R452	ERJ6GEYJ331V	1/10W 330	1	
R455,56	ERJ6GEYJ102Z	1/10W 1K	2	
R458	ERJ6GEYJ102Z	1/10W 1K	1	
R459,60	ERJ6GEYJ224V	1/10W 220K	2	
R470	ERJ8GEYJ103V	1/8W 10K	1	
R471	ERJ6GEYJ181V	1/19W 180	1	
R473	ERJ6GEYJ181V	1/19W 180	1	
R474	ERJ6GEYJ392V	1/10W 3.9K	1	
R475-77	ERJ6GEYJ272V	1/10W 2.7K	3	
R478	ERJ8GEYJ222V	1/8W 2.2K	1	
R479	ERJ6GEYJ272V	1/10W 2.7K	1	
R480	ERJ8GEYJ103V	1/8W 10K	1	
R498	ERJ6GEYJ472V	1/10W 4.7K	1	
R701	ERJ6GEYJ4R7V	1/10W 4.7	1	
R702	ERJ6GEYJ103V	1/10W 10K	1	
R704	ERJ6GEYJ102V	1/10W 1K	1	
R705	ERJ6GEYJ154V	1/10W 150K	1	
R706	ERJ6GEYJ102V	1/10W 1K	1	
R707	ERJ6GEYJ393V	1/10W 39K	1	
R708	ERJ6GEYJ223V	1/10W 22K	1	
R709	ERJ6GEYJ683V	1/10W 68K	1	
R711	ERJ6GEYJ823	1/10W 82K	1	
R712	ERJ8GEYJ221V	1/8W 220	1	
R714	ERJ6GEYJ682V	1/10W 6.8K	1	
R715	ERJ6GEYJ102V	1/10W 1K	1	
R717,18	ERJ6GEYJ102V	1/10W 1K	2	
R721	ERJ6GEYJ101V	1/10W 100	1	
R723	ERJ6GEYJ682V	1/10W 6.8K	1	
R724	ERJ6GEYJ183V	1/10W 18K	1	
R725	ERJ6GEYJ391V	1/10W 390	1	
R727	ERJ6GEYJ472V	1/10W 4.7K	1	
R728,29	ERJ6GEYJ392V	1/10W 3.9K	2	
R731	ERJ6GEYJ682V	1/10W 6.8K	1	
R735,36	ERJ6GEYJ101V	1/10W 100	2	
R741	ERJ6GEYJ473V	1/10W 47K	1	
R742	ERJ6GEYJ224V	1/10W 220K	1	
R744	ERJ6GEYJ124V	1/10W 120K	1	
R749	ERJ6GEYJ472V	1/10W 4.7K	1	
R753	ERJ6GEYJ100	1/10W 10	1	
RJ501-04	ERJ6GEY0R00	1/10W 0	4	
RJ508-11	ERJ6GEY0R00	1/10W 0	4	
RJ514	ERJ6GEY0R00	1/10W 0	1	
RJ601-10	ERJ8GEY0R00V	1/8W 0	10	
RJ614	ERJ8GEY0R00V	1/8W 0	1	
RJ616-19	ERJ8GEY0R00V	1/8W 0	4	
RJ621-23	ERJ8GEY0R00V	1/8W 0	3	
RJ625	ERJ8GEY0R00V	1/8W 0	1	
RJ627-31	ERJ8GEY0R00V	1/8W 0	5	
RJ701	ERJ6GEY0R00V	1/8W 0	1	
RJ702-10	ERJ8GEY0R00V	1/8W 0	9	
RJ712-14	ERJ8GEY0R00V	1/8W 0	3	
RJ716,17	ERJ8GEY0R00V	1/8W 0	2	
RJ721,22	ERJ6GEY0R00V	1/10W 0	2	
RJ724	ERJ6GEY0R00V	1/10W 0	1	
RJ726-28	ERJ6GEY0R00V	1/10W 0	3	
RJ731-36	ERJ6GEY0R00V	1/10W 0	6	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
RJ750	ERJ6GEY0R00V	1/10W 0	1	
RJ802,03	ERJ6GEY0R00	1/10W 0	2	
RJ901-08	ERJ6GEY0R00	1/10W 0	8	
S701	RSH1A043-U	SW REST	1	
S790,91	RSH1A005	SW OPEN/CLOSE DET.	2	
S801-06	EVQ21405R	SW TACT	6	
S807,08	RST2A001-2D	SW CD TEXT/TRACK	2	
SA1	SZZP1054C	PLAYABILITY DISC	1	
SA2	RFKXEM30L	GREASE EM30L	1	
X401	EF0EC4194A4	OSCILLATOR	1	
X701	RSXB33M8J01T	OSCILLATOR	1	

17 Loading Mechanism Parts Location

Note: When changing loading mechanism parts, apply the specified grease to the areas marked "××" as shown in the drawing.

Ref.no.	Part No.
❶	RFKXEM30L



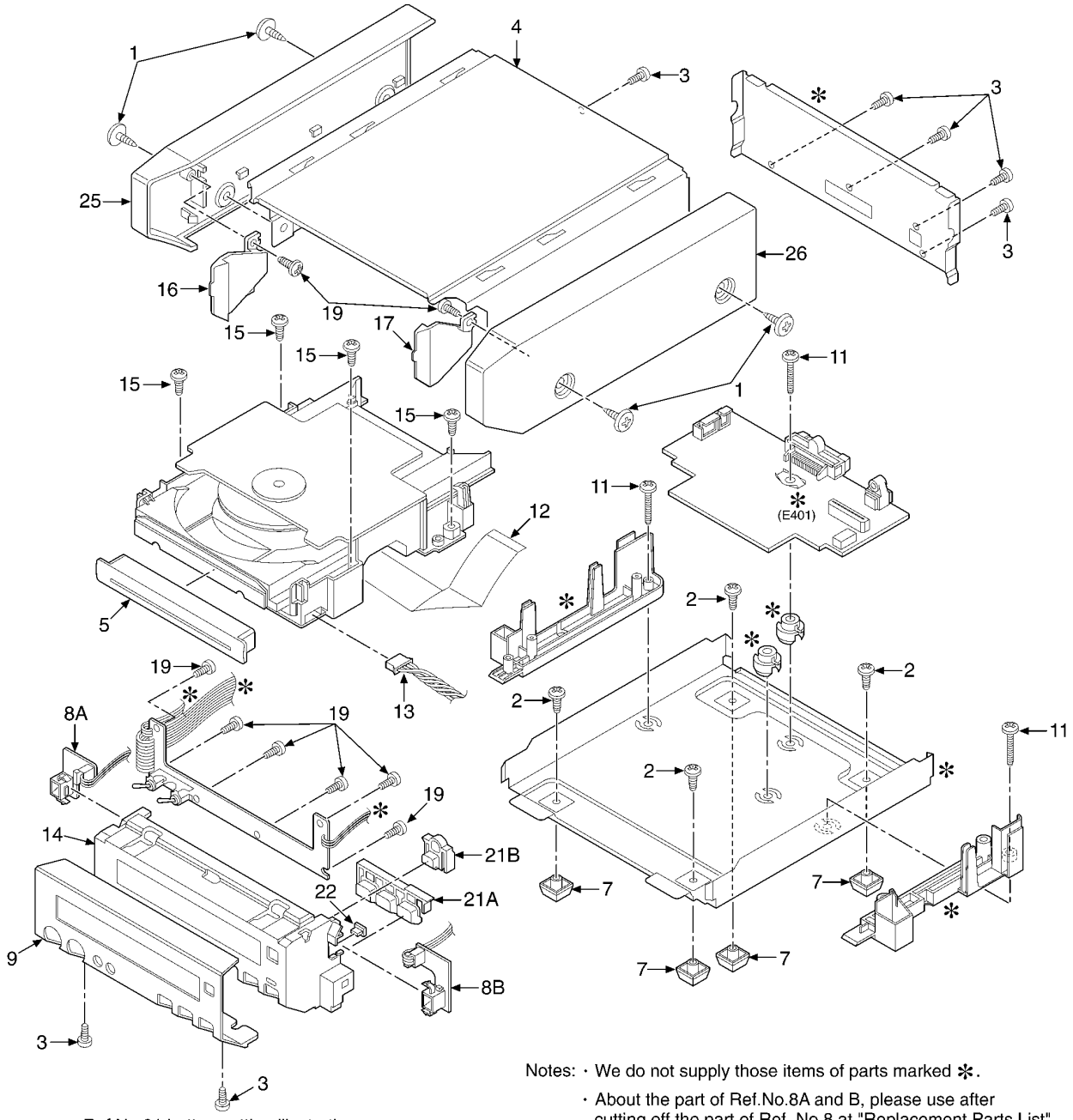
We do not supply those items of parts marked ✻.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
301	RFKJXDT07-K	LOADING CHASSIS ASS'Y	1	
301-1	RDG0142	LOADING GEAR	1	
301-2	RDG0193	LOADING GEAR(1)	1	
301-3	RDP0065	PULLEY	1	
302	REM0019	LOADING MOTOR ASS'Y	1	
304	RGQ0144-K	DISC TRAY	1	
305 ⚠	RAE0152Z-1	TRAVERSE DECK ASS'Y	1	
305-1	SHGD113-1	FLOATING RUBBER	3	
305-2	SNSD38	SCREW	2	
306	RMS0350-1	PIN(B)	1	
307	RMS0627	PIN(A)	1	
308	RME0109	SPRING(1)	2	
309	RME0142	SPRING(2)	1	
310	RMR0698-K1	TRAVERSE CHASSIS	1	

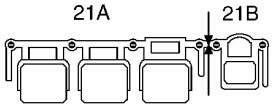
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
311	XTV2+6G	SCREW	2	
312	RME0063	LOCK LEVER SPRING	1	
313	RMM0079-1	SLIDE PLATE(1)	1	
314	RML0178-1	LOCK LEVER	1	
315	RFKNLPG440-K	DRIVE RUCK ASS'Y	1	
316	RHD20009-1	SCREW	1	
317	RME0087	SPRING	1	
318	RML0349	CONVERSION LEVER	1	
319	RMM0059-1	SLIDE PLATE(2)	1	
320	RMR0334	MAGNET HOLDER	1	
321	RHM245ZA	MAGNET	1	
322	RXQ0380	DISC HOLDER	1	
323	XTN26+6G	SCREW	3	
324	RFKNLCH530EA	DISC CLAMPER ASS'Y	1	
325	XYN2+F6FZ	SCREW	2	
326	RMG0158	BELT	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
327	XTN2+6G	SCREW	1	

18 Cabinet parts Location



Ref.No.21 button cutting illustration.



Cut off the button at ◀ point.

Notes: ・We do not supply those items of parts marked ✻.

・About the part of Ref.No.8A and B, please use after cutting off the part of Ref. No.8 at "Replacement Parts List".

(Ref.No.8A : D901 is on the printed circuit board.

Ref.No.8B : D902 is on the printed circuit board.

・About the parts of Ref.No.21A and B, please use after cutting off the part of Ref.No.21 at "Replacement Parts List". (Refer to the illustration of the left.)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RHD30007-S	SCREW	4	
2	XTB3+5JFZ	SCREW	4	
3	XTBS3+8JFZ1	SCREW	7	
4	RKM0363-1S	CABINET	1	
5	RGK0974-1S	TRAY ORNAMENT	1	
7	RKA0098-K	FOOT	4	
8	REP2685A-S	LED(L R)P.C.B.ASS'Y	1	
9	RGG0146A-1S	FRONT PANEL	1	
11	XTB3+12JFZ	SCREW	3	
12	REZ1056-2	FFC(23P)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
13	REX0898	CONNECTOR ASS'Y(6P)	1	
14	RGP0641-1S	SUB PANEL	1	
15	XTB3+8JFZ	SCREW	4	
16	RGL0391-Q	PANEL LIGHT(L)	1	
17	RGL0392-Q	PANEL LIGHT(R)	1	
19	XTBS26+8J	SCREW	8	
21	RGU1600-1S	OPERATION BUTTON	1	
22	RGL0386-Q	PANEL LIGHT	1	
25	RGK0969-1S	SIDE PANEL(L)	1	
26	RGK0970-1S	SIDE PANEL(R)	1	

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